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REDEFINING THE EARLY HARAPPAN PERIOD OF THE INDUS CIVILIZATION

by

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Submitted in partial fulfillment of the requirements for the degree of Master of Arts in Anthropology, Hunter College, The City University of New York.

1995

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Dr. Gregory A. Johnson, Major Advisor

ABSTRACT

This study represents an examination and evaluation of the evidence for the Early Harappan period of the Indus Civilization. The description and distribution of diagnostic ceramics, their stratigraphic placement, and radiocarbon dates have been used to define and describe this little known period.

A review of past studies is undertaken here for the Early Harappan Period, to demonstrate that this period is more complex than previously thought, encompassing a wide variety of regional settlement systems and stylistically distinct cultural areas.

Thus, the reevaluation of various lines of evidence that define the Early Harappan Period offers a new perspective on the Indus Civilization and its origins. As such, we may need to rethink our present description of the periods and its placement in the traditional classical evolutionary stages of cultural development in the Indus Valley.

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I. INTRODUCTION

The Indus or Harappan Civilization in Pakistan has had a short history compared to other well-known civilizations of the Near East. The discovery of Mohen jo daro and Harappa in the early 20th century peaked interest in the then little known civilization. The excavation of the site of Harappa, by Wheeler, gave the Harappan civilization a face on the map of the early civilizations of the Near East. Since then, the Indus or Harappan civilization has provided, and continues to provide, enlightening discussions and excavation reports. However, this new civilization on the landscape has also not been without controversy.

The formative stages of cultural development of the Harappan civilization have provided anything but a simple explanation. Many authors and years of excavations have still not provided an adequate definition or cultural understanding of this early period of the Harappan or Indus Civilization. The problem of defining and explaining the Early Harappan period has plagued archaeologists. Many discrepancies surround this early phase of cultural development. These problems revolve around radiocarbon dates, stratigraphic levels, and the distribution of distinct ceramic styles.

The point of this paper is to explain and reevaluate the definition for the Early Harappan period. Moreover, this paper will present the idea that the pre-Harappan period has been largely overlooked and deserves new and added attention in light of an evaluation of the Amrian evidence. It is intended that this paper can be looked at as a model that can serve as a springboard for further data oriented research in this confusing,

problematic and unexplored area of cultural development in South Asian prehistory.

A. General History of the Region of Sindh

The Indus Civilization has been described as being generally located within the present country of Pakistan. Pakistan consists of a number of different regions based on its ecology and environment. The area of Pakistan discussed in this section is the region of Sindh (Figure 1). Sindh can be divided into regions on the basis of ecological and geological variables (Flam 1981; see Rafiq (1971) for ecological and Brinkman and Rafiq (1971) for geological). Specifically, this paper will focus on the regions of Sindh Kohistan and the Kirthar Mountains and Piedmont due to the location of Amri (Figure 2).

The region of Sindh Kohistan consists "essentially of low mountain ranges with broad undulating plains between them" (Flam 1981:110). These broad plains or valleys are cut by numerous gullies and drainage channels. The Kohistan ranges consist of hard Tertiary limestones and anticlinal rolls of nummulitic limestone. Water flow within Sindh Kohistan, in the form of rivers, is ephemeral. These rivers, when in high velocity, regime, and load become impossible to control for agricultural purposes. The soils in this region do support a fair amount of grasses, but are sparsely distributed. Throughout the Sindh Kohistan area, as well as the Kirthar Mountains region, perennial springs with copious flows are numerous. "The fact is that these springs were active during the prehistoric period is confirmed by the location of a prehistoric site at almost every known spring location in Sindh Kohistan" (Flam 1981:79). Resources within Sindh Kohistan are very important for the location and development of settlements. The major resource in

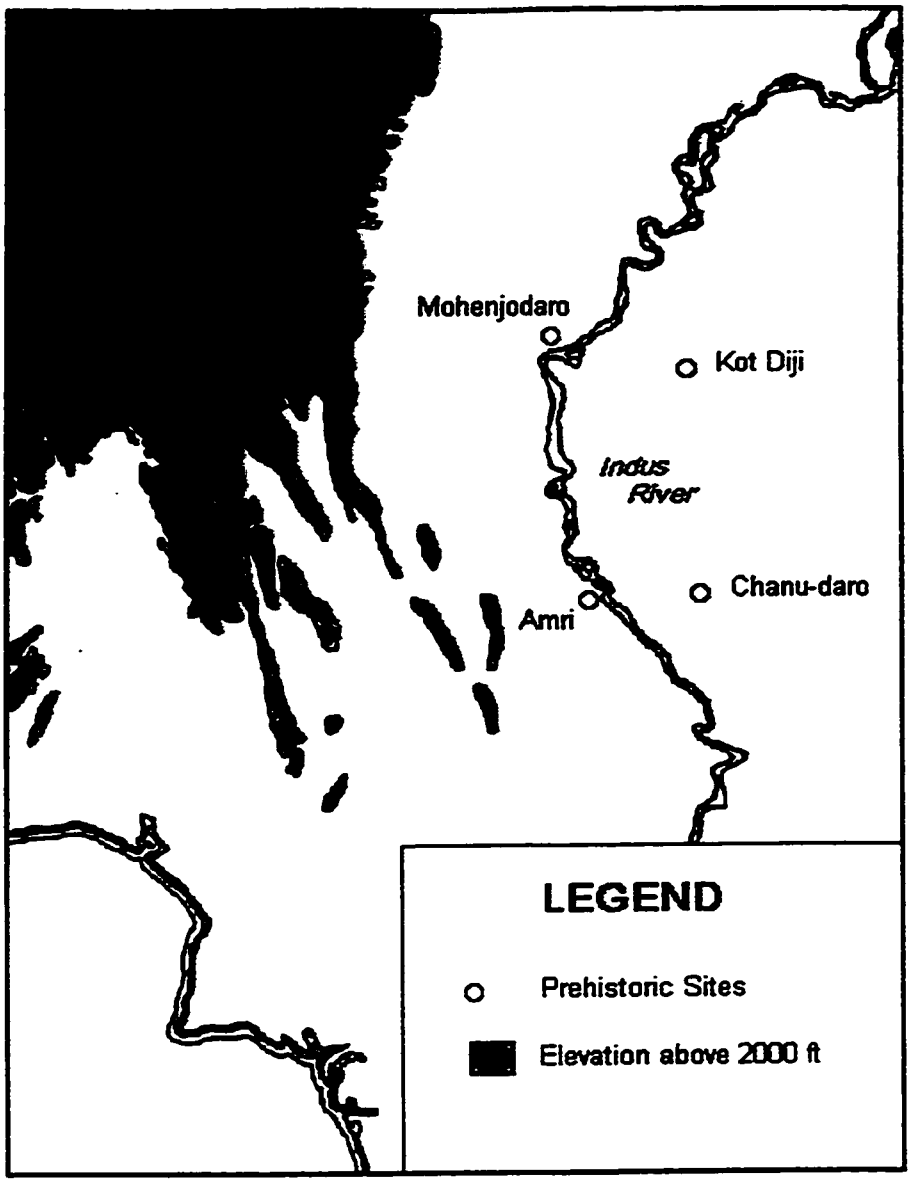

Figure 1. Map of Sindh, Pakistan.

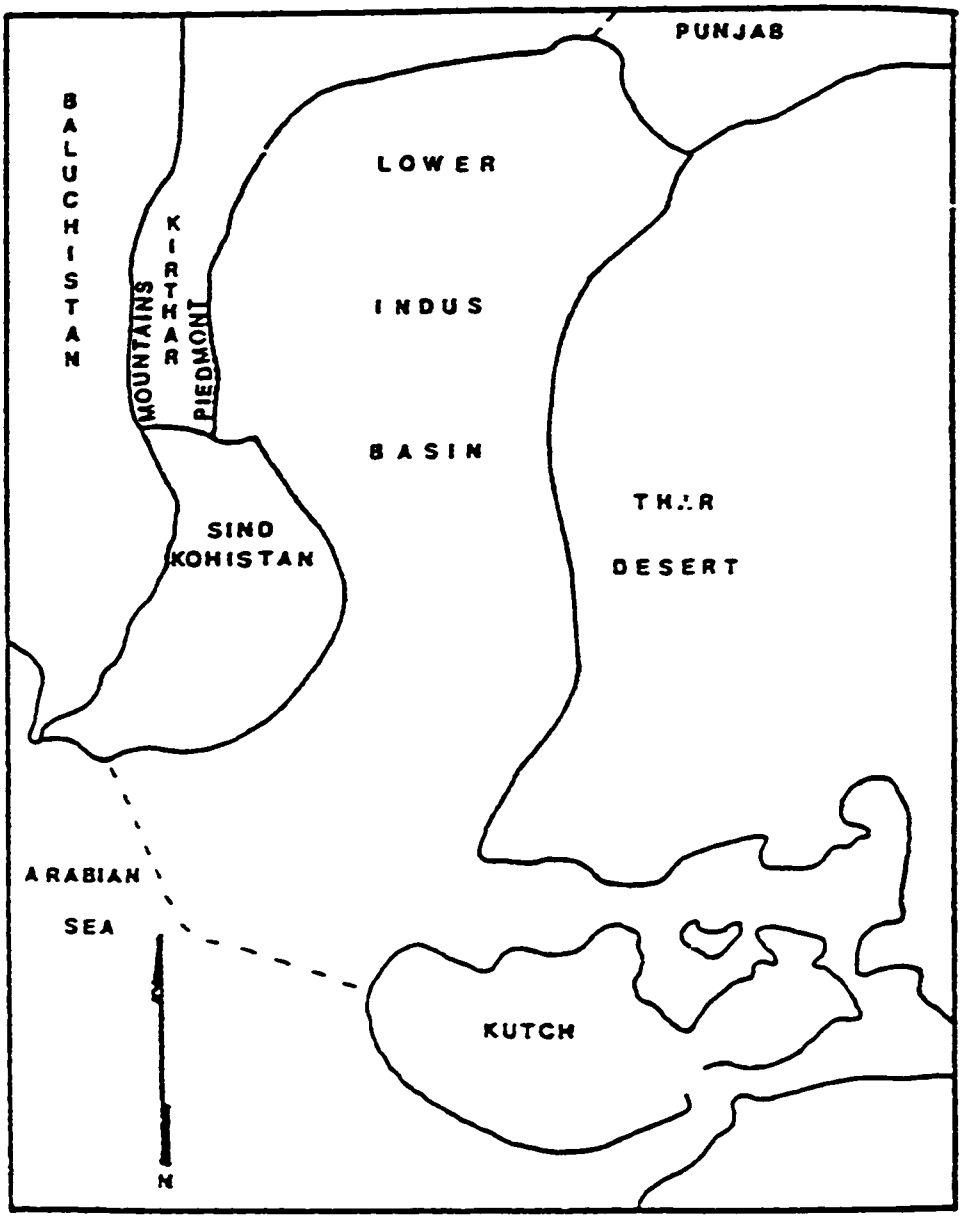

Figure 2. Regions and Adjacent Regions of Sindh (After Flam 1981).

this region is the common occurrence of perennial springs. They supply a constant flow of water allowing year round cropping. However, all fields must be cleared before cultivation, due to the co-occurrence of cultivable soil, which is sparsely distributed throughout the region (Flam 1981). In addition, due the nature of overflow of local rivers, it is possible that a shifting settlement pattern would have resulted (Flam 1995, personal communication).

Sindh Kohistan also contains those resources that deal with the procurement, production and distribution of raw materials. Natural resources such as limestone, basalt and sandstone rocks are readily available for the construction houses and dams. Workable materials such as flint, quartz and dark brown chert, as well as clays for pottery are also locally available.

The second region covered in this paper is the Kirthar Mountains and Piedmont Plain (Figure 2). The border between the Mountains and the Piedmont consists of a number of alluvial fans where transverse nais emerge from upland canyons in the mountains. These nais are seasonal torrents of water that cut through the mountains from west to east. They form an almost continuous water shed for nearly 260 km. Little vegetation can grow close to the Kirthar mountains due to the poor soil formation without human intervention.

Within the Kirthar Mountains and the Piedmont one major resource is also water. In this area water in the form of rainfall and runoff, groundwater, and springs are highly sought. Water in the piedmont plain can be controlled and directed through the use of bunds. Bunds are manmade dams to hold and/or divert water to agricultural fields.

Numerous perennial springs are located in the mountains and foothills, "and the collection of springwater and cultivable soils creates potentially rich agricultural niches in an otherwise desert environment" (Flam 1986:70). Raw materials in the Kirthar region include stone for buildings, flint nodules for stone tools, and clay for pottery production. A wide variety of resources can also be found in adjacent Baluchistan, however, and could be reached by following passes through the mountains.

Sometime during the fourth millennium in Pakistan, there was a shift of settlements from the highlands of Sindh Kohistan to the rich Indus alluvial flood plains, that can be related to an increase in agricultural productivity (Allchin and Allchin 1982). These settlements consisted of bands of families, grouped together into agricultural villages, separated mostly by ecological zones (i.e., mountain ranges, riverine systems, seasonal and permanent springs and their floodplains) (Flam 1981). Among these distinct settlements, there was a convergence of similar traits of material culture that suggested some sort of cultural unification. This convergence happened in several <u>different</u> geographical areas. As part of a larger interaction sphere these settlements exhibited a kind of unified cultural development (Flam 1981, 1986). No one knows if this similarity in traits occurred simultaneously or diffused from area to area. It seems that peoples inhabiting those "zones" produced material culture that was unique in its style and form, in relation to those that preceded and followed it. The presence of these, and other traits at this site have produced a cultural sequence interpreted as the nascent of the Indus Civilization.

B. The Early Harappan Period and Amri

The region of Sindh has provided much of the evidence for what has been termed the Early Harappan Period. Within this area are several key sites that have been used to define and delineate the period including Kot Diji, Amri, Ghazi Shah, and Mohen jo Daro. The cultural material from these sites are thought to represent an early urban or developmental stage of the Harappan Civilization in the Greater Indus Valley dating from around 3,000 or 3,500 B.C. (Mughal, 1990). However, as this paper will show, the site of Kot Diji has become the central frame of reference for this Early Harappan Period, to the exclusion of the important site of Amri. In addition, some of the material, particularly from the site of Amri, may actually represent a period of cultural development that has yet to be defined.

This paper will look at this time period in great detail focusing on the numerous pottery types, designs, and distributions that characterize this very heterogeneous period in an effort to discern the subphases of the Early Harappan. Chapter Two will focus on the history of study of the Early Harappan period including its chronology, cultural diagnostics, and incongruities surrounding its very definition. It will become apparent that this period has yet to be properly, and universally, defined. Chapter Three will focus exclusively on the site of Amri, located in the heart of Sindh in what is known as the Sindh Kohistan region. This site's long history will be documented from its discovery back in the early 1800's to its most recent excavations in the early 1960's. The problems involved with dating and delineating the various occupational levels of the Amrian sequence will be discussed. Chapter Four will examine the ceramic material from Amri

in detail. Its possible chronological and cultural relationships to other sites in the Indus Valley, and the larger regions of South Asia and the Near East will be discussed.

The remainder of the thesis will focus on the how the cultural material from Amri can be used to help reinterpret the Early Harappan Period. In Chapter five stylistic and regional differences in ceramics of the Early Harappan Period are examined in detail. The relationship between the ceramics from Amri and the more well known ceramics from Kot Diji is explored further in order to clarify the chronological and cultural sequence of the Early Harappan Period. Through stylistic comparisons, the earliest yet to be defined part of the Amrian sequence becomes highlighted. Chapter 6 introduces the possibility that Amri might belong to a larger settlement system operating within the Sindh region, with its own distinctive culture. This is expored iin light of evidence of a distinct distribution of Amrian like ceramics within a uniform ecological zone. This will be shown by applying the concept of horizon styles. Through this analysis, the Amri Culture will be shown to be distinct from that of other regional settlement systems, thus illustrating the complexity of the Early Harappan Period.

Through this thorough discussion of this time period and the specific cultural relationships between Amri and related sites, it becomes possible to better understand the Early Harappan Period. Rather than being used as a wastebasket for all material prior to the Mature Harappan, the Early Harappan is viewed as a complex cultural period encompassing a wide variety of regional settlement systems, each somewhat distinct. Although related to the later Mature Harappan, its complexity makes it an intriguing part of the Harappan sequence that should be given a lot more attention. In addition, the very

earliest material from the site of Amri appears to represent an undefined period of cultural development that may not fit within the definition of the Early Harappan. The presence of this distinct cultural occupation also illustrates that the Early Harappan period may encompass more diversity than was once thought. In light of this, the entire framework of the Early Harappan period of the Indus Civilization must be challenged through further studies of the chronology, variability, and geographic distribution of sites in this period.

II. THE EARLY HARAPPAN PERIOD

The Early Harappan period refers to material prior to, and culturally linked to, the Mature Harappan thus representing an early urban or developmental stage of the Harappan Civilization in the Greater Indus Valley (Mughal 1971). The beginnings of this period date to the early to mid third millennium B.C. (Allchin and Allchin 1982; Casal 1964a; Fairservis 1971; Mughal 1970). Although cultural material from this time period is abundant little is actually known, or at least agreed upon, concerning the definition, nature and extent of this very heterogeneous time period.

Traditionally, what is now termed the Early Harappan period had been treated as a culturally unified whole. But as further excavations were carried out it was realized that the period actually consisted of different cultural assemblages within the Greater Indus Valley (Mughal 1970). These assemblages were in some instances restricted to certain geographically distinct areas, most likely local areas. The early literature represented these areas as several cultural groups (Piggott 1950; Wheeler 1968). These groups lived in ecologically diverse localities, participated in agricultural activities, and practiced specialized or semi-specialized craft production. Their society was almost semi-urban in its cultural development. Material culture in the form of pottery assemblages produced by these groups, appeared to be limited to those specific localities, to which the extent of the Early Harappan period has been associated.

The widely cited evidence for the Early Harappan period has been the Kot Dijian, Amrian and Sothi complexes (Mughal 1970). Mughal (1970, 1988, 1990) has stated that

with the radiocarbon dating of the available evidence, these early materials represented an Early Harappan phase of the Mature Harappan. However, it was the site of Kot Diji that became the basic frame of reference, due to its stratigraphic ceramic sequence and ceramic distribution, for the Early Harappan Period. The result of this was that those other assemblages and their sites were pushed aside, and given little importance within the cultural sequence of the Harappan Civilization.

Most authors who have discussed the Early Harappan period cite diagnostic ceramics, their distribution, their stratigraphic placement, and radiocarbon dates as the dominant evidence for the naming of this period. However, these types of examinations have proved problematic. Due to the difficulty in correlating sites, limited excavations, and the paucity and conflicting radiocarbon dates an adequate interpretation of the Early Harappan period is lacking. As a result, improper designations and definitions of the Early Harappan has left the concept confusing.

A. The Origin of the Term

The Early Harappan period was originally discussed by Mughal (1970) in his examination of prehistoric sites within the Greater Indus Valley. Prior to Mughal's work, authors applied the term pre-Harappan to all material chronologically earlier that the fully developed Mature phase of the Indus civilization (Casal 1964a; Flam 1981; Majumdar 1934). Mughal (1990:176) pointed out that the use of the term pre-Harappan implied "no positive cultural relationship with the overlying Harappan remains". He suggested this separation of earlier materials obscured the relationship between early

materials and later, mature, material. He recognized that some of the material might constitute an early, formative, phase of the Mature Harappan, and therefore chose to place much of this material into, what he termed, the Early Harappan. Earlier material which had also previously been considered "pre-Harappan" Mughal termed pre-Early Harappan. The pre-Early Harappan period covered all material prior to the third millennium B.C. incorporating material from such sites as Kili Gul Mohammed II and III, Anjiri I-II, Rana-ghundai I and Sarai Khola I, and Amri IA.

B. Defining the Early Harappan

The Early Harappan period has been defined in a number of ways. All of them have their merit in portraying evidence of this period and its complex nature. Numerous authors have also described the pottery of this period and have discussed how it played an important role. The relationship between material culture and people is dialectic and most of all adaptive. The many groups, both in the hills of Baluchistan and on the Indus Valley, interacted and produced material culture that was the result of many years of contact.

Walter Fairservis (1967), a prominent South Asian archaeologist, published "The Origin, Character and Decline of an Early Civilization," in which he presented several stages of cultural development in the Indus Valley. He described some of the likely characteristics of the Early period in the Indus civilization. Fairservis's (1967:70-71) stages of cultural development include Stage I (Pastoralism with limited cultivation), Stage II (Developed Cultivation and Pastoralism: Beginnings of Regionalization) and

Stage III (Fully Developed Sedentary Village Life: Regionalization but Interregional Contact). As Stage II correlates with the Early Harappan period, only it will be discussed here.

In Stage II, there is evidence of permanent village settlements, dating from about 3300 B.C. to about 2500 B.C. The ceramics from this period are both wheel-made and handmade. The ceramic wares include red-on black, white-on-black, and pedestal cups. Painted motifs on these ceramics consisted of animal motifs and a number of geometric designs (Fairservis 1967:69). Fairservis (1967:69) noted that in "the earlier phases of this stage there seems to have been a general distribution of the same assemblage of artifacts from southern Afghanistan to central Baluchistan". Fairservis also observed the emergence, during this period, of highly distinct styles of pottery. These types of pottery were represented within individual regions and hence, the term "regionalization" was used for this period of cultural development. These few but important details on the ceramics provide insight into this early phase of cultural development. Such regionalization is evidenced in the many pottery groups found in Baluchistan and the Indus Valley.

Fairservis stated that Amri was derived from the Nal-Kechi Beg-Quetta tradition of Baluchistan. Fairservis (1971:170) also suggested that using such terms as Amri-Nal, or Amri-Quetta, which show the association between the Indus Valley and Baluchistan, are "symptomatic of a too general use of the term to include many typological series". Fairservis also suggested that the term Amri should be limited to that area of the Indus Valley. Currently, those terms are the only ones that are descriptive enough to explain

the complex nature of these ceramics. Fairservis has a valid argument, however, he lacks absolute dates retrieved from excavations of those Amri-Nal, Amri-Quetta sites from Baluchistan to test his assumptions.

In his book, "The Roots of Ancient India" (1971), Fairservis also presented one of the most in-depth, detailed descriptions of the Indus culture. In the book Fairservis uses ceramic typology to examine the similarities and differences between the numerous cultural groups that inhabited the Baluchistan hills and the Indus river plains. Fairservis' comparisons provide insight into the similar design motifs and possibly the behavioral motivation, used by these cultural groups. This outward display of behavior as design on the ceramics is apparent during this early period, indicating a full-spread of regionalization. It was for this reason that Fairservis suggested Baluchistan, as the place where the Indus Civilization began and moved down onto the Indus Plain. Fairservis (1967:72) stated that "whereas these people share a range of artifacts that establish common generic ties and contemporary contacts, there are, nonetheless, stylistic differences proving that regionalization was maintained even within the Indus River Valley". Moreover, this distinction between different ceramic styles may have resulted from "the localization of village life and the influence of a different ecology..." (Fairservis 1967:71). As a result, Fairservis singled out Baluchistan as the origin of the Indus Civilization. Fairservis neglected to include the Indus Valley within his origin hypothesis, overlooking any relationship between the hills of Baluchistan and the fertile Indus Valley. His ideas on the relationship between regionalization and distinct ceramics have many implications for future research.

Another comprehensive examination of the early period of the Indus civilization has been presented by Allchin and Allchin (1982). The Allchins have stated that the highly individual styles in pottery lead early authors to describe distinct "cultures" on this basis. The Allchins described the Early Harappan period as a period of great cultural significance in which settlements exploited the rich alluvial soils of the river. They suggest there was cultural unification during this period in which there was a "convergence of traits of material culture." Yet, they also emphasize that this period was "accompanied by the maintenance of separate regional traditions" (Allchin and Allchin 1982:141). Only the pottery has been acquainted with regional traditions because of the identifying distinct design motifs. This theory emphasizes regional distinctions, between Baluchistan and the Indus Valley, which the Allchin's describe as important to the development of the Early Harappan period. The Allchin's also stress the relations between the two regions and how they could have benefited from this interaction.

Other authors such as Shaffer (1992) have used the concept of "regionalization" based on the work of Fairservis (1967). Shaffer defines an entire period as the "Regionalization Era" encompassing a number of different phases, thus lumping many pottery styles together. The term regionalization used in this way does not describe the full nature of the Early Harappan period and is not used by many authors.

Shaffer also uses words such as "Tradition," "Era" and "Phase" in describing his view of the chronological history. He also separates the cultural development in Pakistan by geographical area, thus superimposing artificial cultural boundaries on an entire cultural network. He applies different names for cultural phases within a period, even if

those phases are within the same period (i.e., the Balakot Phase and the Amri Phase of the Regionalization Era of the Indus Valley Tradition). Shaffer also does not examine the full extent of the relationship between the Baluchistan, the Helmand, and Indus Valley Traditions. It is also worth noting that Shaffer includes a Hakra Phase with the Amri Phase along with similar range dates. He suggests 3600-3000 B.C. for the Amri Phase and uses Mughal's suggested 3500-3000 B.C. for the Hakra Phase. The dates for the Hakra Phase, however, have never been established by radiocarbon dating and it is possible that the Amri dates might be earlier.

Shaffer (1992:442) does point out that these terms are not developmental stages, but they still create confusion. According to Shaffer (1992:442), Regionalization is defined as "distinct artifact styles, essentially ceramics, which cluster in time and space, and interaction networks which link dispersed social groups". This definition has great potential, in that the clustering of distinct artifact styles in space and time seem to invoke the notion of horizon styles as discussed by Willey and Phillips (1959).

As discussed earlier, Mughal (1970, 1972) was the first to introduce the term Early Harappan to refer to material that constituted an early, formative phase of the Mature Harappan. Material that he considered earlier, and unrelated to the Mature Harappan he termed pre-Early Harappan. Mughal's terminology did help to clarify this time period which had become a wastebasket for all early material that could not be included in the Mature Harappan. Yet it did not provide a means to further delineate cultural stages within the Early Harappan.

The Early Harappan Period, as defined by Mughal (1970), constitutes a number of

artifact (ceramic) types, including Kot Diji, Amri and Sothi. Mughal (1970:176) stated that "the basic frame of reference for the definition of the Early Harappan Period was the site of Kot Diji from where the stratigraphic ceramic sequence was used to define the Early Harappan (Kot Dijian) pottery types and their extensive distribution". Radiocarbon evidence from the lower levels of Kot Diji (Level 14) also helped to support Mughal's definition. Mughal also suggested that the Kot Dijian assemblage was genetically related to the Harappan throughout the Greater Indus Valley.

Since the work of Mughal, several authors have grappled with the problem of defining the temporal and geographic limits of what Mughal called Early Harappan. A major problem is that many authors continue to group the pre- and Early phases together and use them interchangeably. Some have confused the issue further by using the term pre-Harappan to describe a non-Harappan culture living simultaneously with the Late Harappan pottery tradition (see Dales 1982:425-426 for discussion). Dales (1973) has even suggested a completely new terminology. This confusion has resulted in mostly subjective demarcation of stages with little agreement on how to define the boundaries at a larger scale let alone within the microevolutionary frame of the Early Harappan period.

Recently, Mughal (1990:196) has reinterpreted the partitioning of his Early Harappan by proposing a tripartite division for the period. Mughal (1990:196) separates the Early Harappan into three phases and associates dates with them.

3500-3000 BC.	Early Harappan A Phase
3000-2500 BC.	Early Harappan B Phase
2500-2100 BC.	Early Harappan C Phase

These three phases reflect the distinct changes in the cultural development of the Indus

civilization towards full urbanization. This distinction of the Early Harappan period is based solely on the Kot Dijian ceramics as they occur stratigraphically from a number of sites (Mughal 1990:195-6). This theory is in contrast to his earlier argument about the Early Harappan period, presented in 1970, that stated that "all the Kot Dijian and contemporary Sothi and Amrian assemblages constituted an integral part of the Harappan civilization and represent an early or formative period of development" (1990:186).

In this new tripartite division, Mughal (1990:194) continued to use the site of Kot Diji and its distribution to define the Early Harappan Period. Though Mughal included the site of Amri within his Early Harappan definition he neglected to regard the earliest Amrian sequence in his description of the Early Harappan Phase. As he does not resolve the confusion involving some of the early material from the site of Amri, many of the problems surrounding the delineation of the Early Harappan period remain unresolved.

C. Problems with the Interpretation of Early Harappan Period

The Harappan Civilization has been defined and designated in terms of a chronological period, a cultural stage and an ethnic group (Dyson 1982). Emphasis of study is still focused on the birth, maturity, and death of this civilization. The terminological confusion associated with every period of this civilization has been exhaustively discussed (Dales 1973, 1982; Dyson 1982). Despite this, there has been little change in the way that Harappan cultural stages have been interpreted. Nowhere is this more prevalent than with the Early Harappan Period.

Most of the confusion concerning the Early Harappan has centered around

chronologically defining the period. Stratigraphy and stratigraphic context is extremely important for defining the Early Harappan period. The delineation of this period relies on material evidence found in stratigraphic context, often with the association of other means of dating (i.e., radiocarbon material). Both relative chronological dating and absolute dating methods have presented difficulties.

Numerous problems are encountered with regards to the radiocarbon evidence. One major obstacle is that, even today, there are few radiocarbon dates available from excavated sites partly because of a lack of material with which to perform such dating tests, and partly due to the paucity of excavated sites within the Sindh region. Moreover, the dates that do exist are somewhat misleading due to the way in which occupational levels have been defined. As the occupational levels are based on cultural stratigraphy each level represents an unknown length of time. A single radiocarbon date from a single occupational level cannot be extrapolated to provide information concerning the overall time span of the site or the Early Harappan period. Unfortunately, this is what has been done by some authors, for example Mughal in his interpretation of the site of Kot Diji (1970).

Mughal had determined the extent of the Early Harappan period by using the radiocarbon dates from a number of sites all associated with the site of Kot Diji. According to Mughal (1990:195-197), the beginnings of the Early Harappan period started somewhere around 3500 B.C. Mughal (1970) originally defined the Early Harappan period as an early urban stage of the Mature Harappan, later separating this period into phases by using radiocarbon dates from other sites. However, the radiocarbon

dates Mughal presented for the Early Harappan period were uncalibrated as of 1970. Furthermore, even though Mughal (1990:196-197) used calibrated dates from other sites he continued to reference his earlier uncalibrated dates to confirm the early nature of the site of Kot Diji and the Early Harappan period.

One of the major problems surrounding the definition of the Early Harappan has been the continued use of Kot Diji as the primary frame of reference for this period. Problems associated with correlating Kot Diji with other sites lie with the interpretation of the stratigraphy and the radiocarbon evidence. First, it appears that Level 14 from Kot Diji produced a radiocarbon date of 3370-2900 B.C. (calibrated), whereas Period IB from Amri produced a date of 3660-3365 B.C. (calibrated). It seems fairly obvious that Amri has both the earliest date and a well documented cultural stratigraphic occupation (Casal 1964a). Another point to make is that most of the published radiocarbon dates also do not support Mughal's dates for the Early Harappan. Most, if not all of the radiocarbon dates seem to center around 3000 B.C. These dates come from well documented and excavated sites, as well as the recent excavations at Harappa itself (Kenoyer 1991). This is further corroborated at one excavated site in Sindh, at which Kot Dijian pottery does not occur earlier than around 3100 B.C. (Flam 1995, personal communication). These published radiocarbon dates clearly indicate the "diagnostic" Kot Dijian ceramics to have started around 3000 B.C.

The Amrian and Kot Dijian ceramics seem to be stylistically unrelated. Each represents a unique cultural component in different regions of Sindh. Both Amrian and Kot Dijian ceramics have been identified in the early layers at either site, indicating that

both sites are contemporaneous. Mughal believes only the Kot Dijan pottery to be genetically related to the Mature Harappan, leaving the nature of the earliest non-Early Harappan levels of Amri in question.

It seems that ceramics played a vital role in the early cultural development of the Indus Civilization. It is also apparent that both Amri and Kot Diji can reveal information about the chronology of the Early Harappan Period through their ceramics, but the relationship between the Amrian and Kot Dijian sequences and cultures has yet to be resolved. The inherent problems in identifying the cultural and chronological significance of the Early Harappan period have not been addressed. However, the site of Amri presents itself with information that can hopefully alter present conceptual frameworks of the Early Harappan period.

III. THE SITE OF AMRI

Amri is situated approximately 130 kilometers south of Mohen jo daro, and directly opposite of Chanhudaro on the western bank of the Indus River (Mughal 1970:84) (Figure 3). The site of Amri is located on the edge of the alluvium of the Indus River Basin, at the foot of the Lakhi Hills. The examination of Amri is important for a number of reasons. First, the cultural and chronological sequence of the site is sketchy in relationship to the definition of the Early Harappan period. Secondly, the Amrian ceramics along with the relative and radiocarbon evidence have never been critically examined. Amri's placement within the Early Harappan period, according to Mughal (1970) is not as important to the cultural development of the Harappan Civilization as Kot Diji. But Amri's pottery distribution also provides links to being more than just pottery exchange. It is suggested that the Amri an ceramics along with other evidence hold the key to a re-interpretation of the early period of the Harappan Civilization.

Amri is comprised of two mounds, named Mound A and Mound B by Casal (1964a). Majumdar named these mounds, Mound 1 and Mound 2, respectively. There also seemed to be a third and fourth mound near the initial two. These mounds are named Mound C and D, but are just extensions of the two primary mounds (Casal 1968:47; Casal 1964b, Figure 3). The site itself is extensive. The following has been adapted from Flam (1981:313) to show the extent of the Amri.

Mound A	Length	135 meters E-W
	Width	70 meters N-S
	Height	12 meters

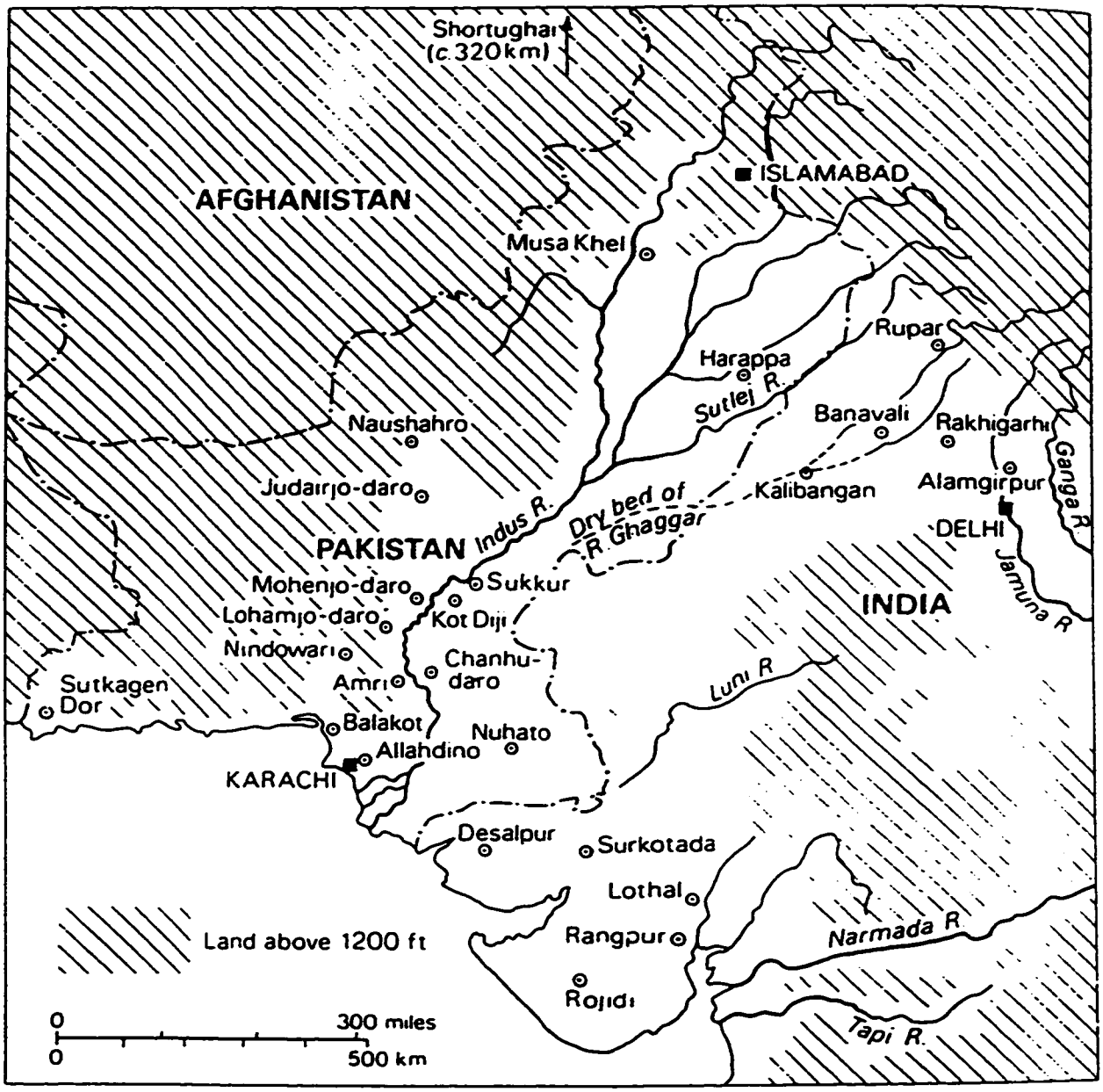

Figure 3. Map of Pakistan with sites highlighted in text (After Allchin and Allchin 1982).

Mound B	Length	95 meters N-S
	Width	50 meters E-W
	Height	6 meters
Total Area		600 meters E-W
		150 meters N-W
		90,000 square meters

Excavations at Amri revealed a long history of occupation going back to the middle of the fourth millennium and possibly earlier. These excavations, under the direction of Jean Marie Casal, recovered numerous ceramic types that have stylistic similarities to ceramics found at sites within Sindh and Baluchistan, including Mundigak in Afghanistan, Bampur in Baluchistan, and Tepe Yahya in Iran. The relative and absolute chronology of Amri attests to this site's peculiar placement within the Early Harappan period.

A. History of Discovery

Amri was first discovered by Burnes in 1834 who recorded its first observations. Archaeological excavations were not carried out at Amri until the site was visited by Majumdar in 1929. Preliminary excavations were carried out by Majumdar near the end of 1929. Majumdar (1934, Plate XLIII) excavated several "sondages" on Mound 2 and examined and interpreted his finds in a published monograph (Figure 4). Later full scale scientific excavations were carried out at Amri by Jean-Marie Casal of the French Archaeological Mission between 1959 and 1962 and a full monograph was published in 1964.

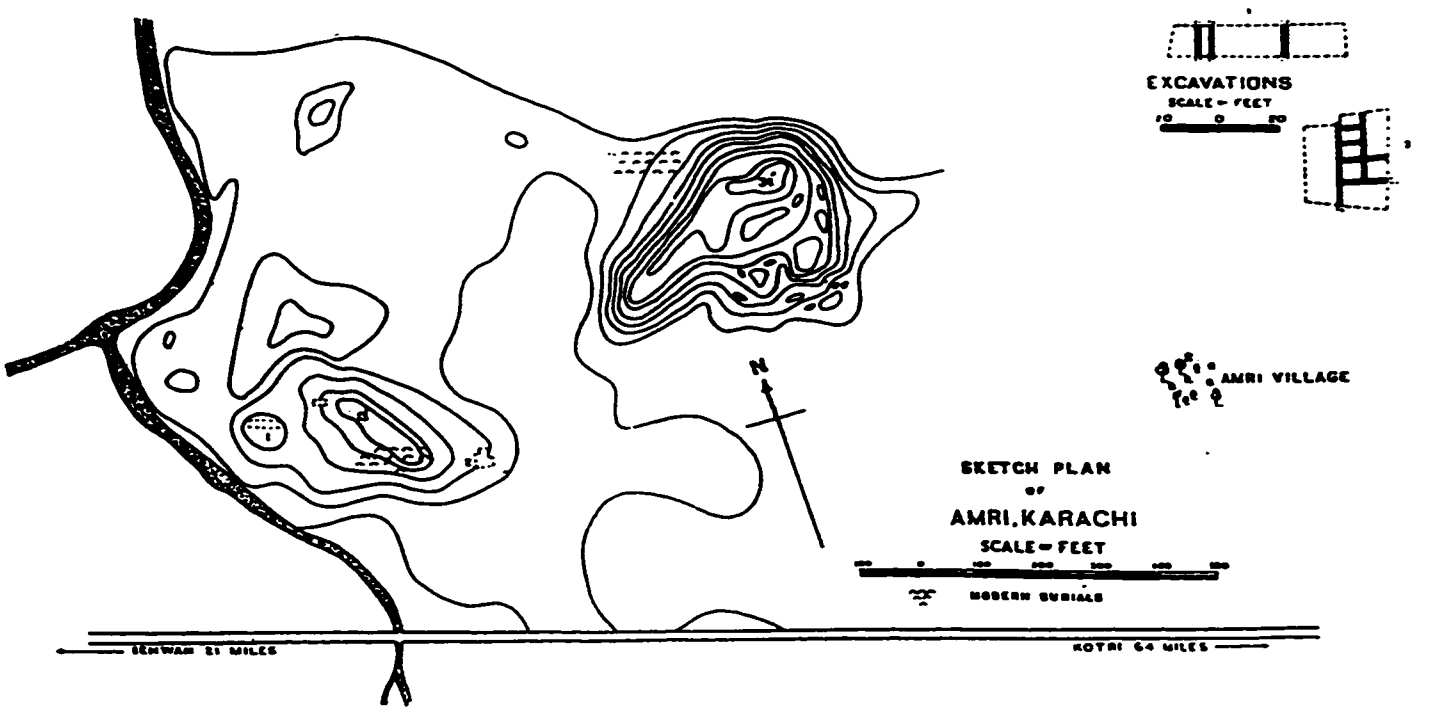

Figure 4. Majumdar's excavations at Amri.

It was Majumdar who first suggested that in the lower levels at Amri there were pre-Harappan remains. These material remains were limited to pottery, similar types of which were also confirmed at other sites in the Lake Manchar region (Fairservis 1971; Flam 1981). These excavations at Amri revealed two series of occupations separated by a long period of abandonment. Casal's excavations revealed that there was no cultural or temporal break between the Amrian and Harappan occupations. Casal and Majumdar both agreed that there was also no generative relationship between earlier and later occupations. The earliest layer seemed to extend back as far as the very beginning of the third millennium B.C. (Casal 1964a).

B. Excavations at Amri

The following summary descriptions of the excavations from Amri come from both Allchin and Allchin (1982) and Fairservis (1971). The levels at Amri have been divided into three Periods I, II, and III. The first period is separated into four stages (A, B, C, D). The excavations from Period IA revealed a culture with no structures. There were buried storage jars and numerous other pottery pieces (Allchin and Allchin 1982). Fairservis (1971:176) noted that handmade pottery represented approximately 80% of the ceramic material recovered. Some of these were decorated in black and red, while others showed similar color and design affinities with neighboring sites. Similarities existed with Togau C, giving typological tie to de Cardi's Period III in central Baluchistan, and also contemporary with Anjira III-IV (Allchin and Allchin 1982: Figure 6.11). Of the handmade shards, only a few were decorated with bichrome while most were

monochrome. There does not seem to be any cultural break between occupational levels IA and IB on Mound A or B (see Casal 1964b:59). The pottery in Period IB was very similar to that IA except for certain changes in shape, such as the introduction of the dish-on-stand and larger storage jars. The pottery is also appears more developed in that there are a wider range of painted motifs. Shaffer also noted a problem concerning his Amri Phase. During the Amri-Balakot Phase, around 3500 B.C. the pottery at this stage appears fully developed. The architectural remains of IB reveal two phases of mud brick buildings and the stone tools remained the same.

Period IC seemed to be the high point for the Amri culture (Allchin and Allchin 1982:141). There were no less than four structural phases during this period. Houses were made out of mud-brick and stone and others with multiple cellular compartments (Allchin and Allchin 1982). Approximately half of the pottery of this period was wheel thrown and contained a variety of painted motifs. The storage jars from IB were very common during this period. All of the pottery consisted of geometric designs, which encompassed most known examples of Amri pottery. These geometric designs occurred in either brown or black, and ochre or orange-upon-pink in either polychrome or plain (Allchin and Allchin 1982). The radiocarbon dates from this period date to 3375-3020 B.C. (Possehl 1988) and the plausible dates from Allchin and Allchin (1982:142) are 3540-3240 B.C. which overlap. It was determined that the range of design forms in Period IC are a direct development from the earlier phases (Allchin and Allchin 1982:142). The architecture from Period ID essentially continues from IC, but there was one structural phase. The pottery of Period ID was also similar to that of IC, but a bit

more florid and depictive. Animals reminecent to those of Kulli, such as humped bulls, rows of quadrupeds, caprids and one carnivore. Moreover, a few Harappan shards with correspondences to Kot Dijian ceramics are significant. It is interesting that these motifs, both geometric and animal would have representatives in other sites in Sindh Kohistan and Baluchistan.

IA-B	IC	ID	IIB
Mergharh IV (early levels)		Mundigak III (upper levels)	Mergharh (final period)
Damb Sadaat I (early levels)		Anjiria III/IV (upper levels)	Damb Sadaat II&III (developed 'Quetta')
Anjira III			Mundigak IV.I
KGM III/IV			Shahr-i Sokhta II
Mundigak III			Kot Diji (early)
Togau C (IA)			
Early Kulli			

Table 1: Amri crossdated with other prehistoric sites (after Allchin and Allchin 1982; Fairservis 1971).

The Period ID occupation on Mound A also showed signs of being leveled and reconstructed during Period IIA. There did not seem to be any clear explanation as to why this was done. Period II marks a great change in the occupation at Amri. There was no cultural break between the two Periods on Mound A, while there was one on Mound B. This seemed to represent a construction and rebuilding of the occupation. Period II ends with a gap in the occupation on Mound, which seems strange since this is a transitional and high point in the culture. This period (IIA) also marks an increasing number of Harappan type ceramics along with Amrian ware. This period is regarded as

being transitional between the purely Amrian of Period I (A and B) and the Mature Harappan of Amri III (Allchin and Allchin 1982; Casal 1964b). During Period IIB there was a large mud-brick platform with postholes that was constructed on the west of Mound A (Fairservis 1971:178). Allchin and Allchin (1982:143) cross dated this period with that of Mundigak IV.I, Damb Sadaat II, and more especially with Kot Diji. The following table (Table 1) displays Amri periods which have been crossdated with other sites of the similar periods in Pakistan. It seemed that during this "transitional" period, between Periods I and II, there was and increase in the number of Harappan pottery (Casal 1964a). Also the pottery of the Amri-type is a little more developed than in Period I. Mound A had the earliest occupation, starting in Period IA, which continued through until the Mature Harappan period, this was then followed by a gap in the record (Casal 1964b:59). Excavations revealed that there was no cultural break between the two periods, and that the Amri cultural sequence continues. This does not occur at the site of Kot Diji.

Period III seemed to exhibit characteristics of a Mature Harappan period of the site. Fairservis (1971:178-179) noted that the occupation of Period IIIA was Mature Harappan. Period IIIB is called a transitional phase, leading to a late phase (IIIC) like that at Mohenjodaro, and at last by a Jhukar level (subperiod IIID). Period III will not be discussed in length in this paper because it is later in time. The focus will instead center on the first two periods in the occupational history of Amri.

C. State of Research on the site of Amri

During the earliest occupation at Amri, the site witnessed its widest extension of settlement. The entire settlement at Amri was approximately 22.3 hectares in size. Amri would never again attain that size during its existence. Casal (1964b:60) labeled the occupational periods at Amri based on his excavations: The Amri Culture (Period I), The Intermediate Period (Period II), The Indus Valley (Harappan) Civilization (Period III), and lastly, The Jhangar (or Jhukar) Culture (Period IV). It seemed to Casal that the pottery of the Amri Culture was of extreme importance. The earliest levels at Amri have been overlooked and disregarded as being noncontributing to the Early Harappan period. This is just not the case. In fact the ceramics from the early occupation levels can alter the way future research on this period is done.

The Amrian cultural material described within this paper deals strictly with the ceramics. Within the occupational periods of Amri the excavated ceramics comprise both handmade and wheelmade, both of which are vitally important to the cultural development of Baluchistan and Sindh. The ceramics also contain another feature that is worth examination, namely the design motifs. These designs make the Amrian pottery unique, both within Sindh itself, as well as over Baluchistan and Afghanistan. The Amrian designs are found over a wide area and have cultural links to a number of other ceramics, namely to those in Sindh and Baluchistan. As a result these designs are said to be distributed within a restricted ecological area. These distinctions are of great importance for the examination of the earliest occupations at Amri, because past authors have been unable to unravel the enigmatic circumstances surrounding the ceramics, their

connections to other sites, their relationship to the Early Harappan period and their connection to the Mature Harappan period.

The application of ideas concerning ceramic distributions and their areas of cultural influence can provide explanations about the chronology, of the early Amrians. This type of examination may provide some insight into how early the specific occupation at Amri was (Casal 1968:49). This type of theoretical model has not been previously attempted for the Amri ceramics of the Early Harappan period. Past investigations and interpretations have provided explanations as to Amri's long duration, its changing cultural sequence, and its integration into Indus Valley Civilization (Casal 1964a; Mughal 1970). These investigations have fallen short of answering what is really being examined. These statements cannot be fully answered without emphasizing the ceramics, their placement within the Early Harappan period, and their relationship to other areas and their development into the Mature Harappan period.

Mughal (1990: 379) has stated that there has been too much emphasis on pottery, and not enough on faunal, floral and architectural remains. Unfortunately, Mughal's concerns do not reach the point of the kind of examination sought for here. He did touch on the point made above regarding the cultural sequencing at Amri and

> that the Amrian wares need proper definition consistent with the evidence found in the Baluch hills. These wares form one of the significant biochrome and ploychrome pottery groups. This group seems to have remained confined to the southwestern part of Sind, having some connections with the Surab and Quetta regions. Its stratigraphical position in the Quetta Valley needs reconsideration because of its chronological implications in relation to the Quetta wares characterized by geometric designs (Mughal 1970: 380)

Other problems involving the Amrian sequence revolve around the interpretations of the excavated occupational levels and their contents. The two radiocarbon dates, one of

which was from an early layer, have received little if no recognition.

The complete excavation results and interpretations do not correspond with earlier paradigms, which were thought to have been disregarded alltogether. Since those conceptual frameworks clearly do not work, alternatives must be sought presently. These new frameworks from which to see the evidence will provide a better understanding of the early cultural development of this civilization.

IV. THE POTTERY OF AMRI

The pottery found on the site of Amri is extremely important in patterning the rise of cultural development in this region. The Amrian design motifs, or more simply stated the styles painted on the pottery, can tell us a lot about the social groups that made them. What is attempted in this thesis is not seriation, but an analysis of the particular design motifs, stratigraphic contexts, and the ceramic distributions. These analyses can contribute to the understanding of the stages of cultural development at Amri and of the Early Harappan period.

A. The Amrian Wares

The pottery from Amri is typically biocrome ware and has given the designation of "Amri ware." It is usually thin, wheel made, and cream or pink in color (Casal 1964a:2). Its decoration includes geometric designs in black or dark brown, and a plain reddish brown band at the neck. Majumdar (1934:27) noted that these wares resemble those Stein (1943) has recovered from Baluchistan. Marshall (1931) has further termed these ceramics "hybrid wares." These were found at Mehi, Kulli and several other sites in Southern Baluchistan. Amri wares vary in shape, however, the open and rimless vessels are most prevalent, such as bowls and beakers.

Majumdar (1934:27-28) describes the Amri pottery, found on Mound A, as pots which had generally thin walls and a plain reddish brown band at the neck, a chocolate band on the inner side of the lip and geometric patterns on the body, in black or chocolate

on pink, and in some cases on cream wash. In a second trench, started by Majumdar on Mound B, similar pottery was found. This pottery was a pale color ceramic bearing geometric designs. Of this pottery, 214 specimens were recovered in the course of Majumdar's excavation. This pottery was found in the same context as remains of buildings. The pottery from this early period is handmade and has been found along with early Kot Diji pottery, specifically Design Type IV (Mughal 1970:86-87). It is also interesting to note that a few shards of Amri style pottery were found in the museum collections of Kot Diji pottery (Flam 1994, personal communication). These handmade ceramics have also been found alongside wheelmade pottery, which shows some interesting characteristics of its importance. It is worth noting that both Majumdar and Casal found early levels that contained these Amri wares. However, Majumdar found them in Mound B, while Casal found them in Mound A only (Casal 1964a, 1964b). It was this pottery found on the smaller mound (B) by Majumdar, and identical to that found on Mound A by Casal, that was called "Amrian" (Mughal 1970:84).

Considering that in Trench I the 'geometric' pottery occupies a lower level than the 'black-on-red,' it would be reasonable to assume that the former belongs to an *earlier period*, according to the law of superposition. Moreover, the fundamental difference between the two wares, both in technique and decoration, would suggest not merely a difference in age but also one in culture between the two strata. The later pottery of Amri, on account of its affinities to that of Mohen jo Daro, should be regarded as a typical product of the Indus civilization, but it still retains its Amrian characteristics. The earlier pot-fabrics of Amri, which will henceforth be called be called the 'Amri pottery,'

should be looked upon as representing an earlier phase of the chalcolithic than that represented by Harappa and Mohen jo daro (Majumdar 1934:27). The Indus civilization had undoubtedly a long history, and it is therefore possible that the 'Amri' culture, while co-existent or identical with some of its phases, antedated others (Majumdar 1934:26-27). However, there has been no at length discussion about the "earlier" pottery also called Amri. To date there has been no discussion nor proper definition of this pottery consistent with evidence found in Baluchistan.

The early Amri pottery has a wide influence and can benefit from the present examination. The Amrian pottery distribution within Sindh, along with the Amrian settlement patterns provides a new avenue of approach for the study of the Early Harappan period. However, the chronological development of the Amrian ceramics throughout Sindh is minimally known. The pottery along with radiocarbon dates from Amri need to be reinterpreted to answer questions about the relationship between Amri and the Early Harappan period. Problems of this sort are not uncommon.

A problem that Casal points out was that during excavation it was difficult to distinguish between certain early layers. Many ceramic types and occupational layers seemed to be intermingled (Casal 1964a:3). There is also the problem centering on the radiocarbon date from Period IB and its relation to Period IA. Period IA must represent an earlier time frame, but we are not sure how early. The discovery of two or more periods of an early occupation during Casal's excavation has added new dimensions to thisproblem of the cultural sequencing at Amri to determine its placement within the Early Harappan period.

Table 2 represents the ceramic types from Amri and the levels in which they were found. While at first glance Casal's divisions appear to be reflective of pottery change, further examination of the pottery indicates that the organization of the earliest periods may need revision. Casal (1968:47-50) described the results of the excavations at Amri and revealed three occupational levels. These levels were distinguished on the basis of distinctly marked pottery types, of which a firm chronological sequence of the site could be made. Casal labeled the surface level as being a Muslim occupation, which then made the second level the first occupation as being of the late period pottery found at Harappan sites, namely Jhukar. The second occupational level was the Mature Harappan culture, and the last was the Amri culture.

Period	Type of Ceramics
IIID	Late Harappan (Jhukar)
IIIC	Mature Harappan (Mohen jo Daro upper levels)
IIIB	Mature Harappan (Transitional)
IIIA	Mature Harappan (Harappan wares)
IIB	Intermediate or Transitional
IIA	Intermediate or Transitional
ID	Amri ware
IC	Amri ware
IB	'Early Amri'/Amri ware
IA	'Early Amri'/Amri ware

Table 2. Chart of Amri Periods and their ceramics (adapted from Casal 1964b:47-50 and Casal 1968:59).

Casal further divided those occupational levels into the table (Table 2) shown above, on the basis of distinct pottery changes. One point to mention is that Casal's

(1964b:59, Figure 6) description and separation of the Harappan pottery (Period IIIA) and Mohen jo Daro pottery (Period IIIC) are portrayed as differences in time. This is based on the observation of different ceramic designs between Period IIIA and Period IIIC. This was thought to reflect the decline of ceramic influence of Harappa, and the influence of new ceramic styles and shapes from Mohen jo Daro. However, this trend is not clear.

The distribution of Amrian pottery along the piedmont of the Kirthar range south of the Marri-Bugti hills and its occurrence below the Mature Harappan occupation at many sites, establishes its Early Harappan character both chronologically and culturally (Mughal 1970:84-5). Mughal stated that since the Amrian occupation contains many pottery types that are related to the Early Harappan occupation at Kot Diji, he regarded Amri as Early Harappan (Mughal 1970: 86). Flam (1981:15) remarks on Mughal's division of the pre-, and Early Harappan, in that Mughal does not account for, or take into consideration, the "earlier" levels of Amri.

On the surface, Table 2 suggests that Mughal's division might be premature (see Figures 5 through 7). Table 3 below shows the very strong relationship between hand made and wheel made pottery within Period I. It also presents a division that has not been examined, that being phases IA and IB could be combined into one period, and phases IC and ID should also be combined. The overall layout of Table 3 and Casal's chart also give further credence to this observation. The combination of Periods IA and IB is based solely on the ceramic evidence and how they have evolved within the stratigraphic sequence.

Period	Hand made	Wheel made
IA	82%	18%
IB		
IC	45%	55%
ID	42%	58%

Table 3. Percentages of Handmade to Wheelmade pottery.

Table 3 indicates the percentage of ceramics found in Period IA of Amri. One can see the large percentage of hand made ceramics to wheel made during this period. Unfortunately, there is no information on the percentages for hand and wheel made ceramics for Period IB. Figures 5 through 7 show the percentages of handmade to wheelmade pottery that were found in Periods IA, IC, and ID. It can be shown that during this period a large percentage of the pottery was wheelmade. This changes over time, however, as handmade ceramics (3%) are still made or being used even into Amri Period IIIC (Casal 1964a:12). This would seem to be very odd, since wheel made ceramics, particularly Early Harappan Kot Dijian ceramics, also occur within these levels. It is also interesting to note that pottery from Period IA occurs alongside pottery from IB. The pottery from Period IB is also very interesting to examine in that the design motifs are more geometric that in IA, possibly a more evolved form of design. Or it may indicate that both Period IA and IB are more alike than previously thought.

The Amrian pottery persists uninterrupted through Period I and Period II. The stratigraphic continuity between Periods IIA and IIB is confirmed by the ceramics and needs not be questioned. Although some Harappan pottery traits enter during Period IIA and IIB, the Intermediate period, they are not considered Mature Harappan designs.

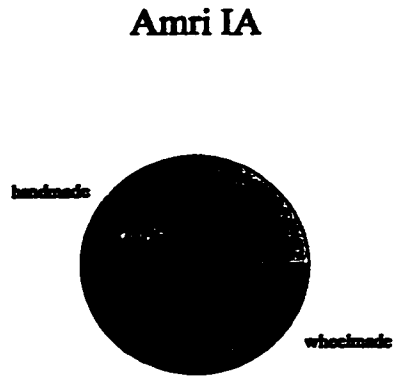

Figure 5: Percentage of handmade to wheelmade.

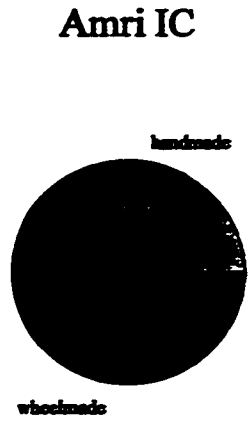

Figure 6: Percentages of handmade to wheelmade.

Figure 7: Percentage of handmade to wheelmade.

Period IIIA marks the total disappearance of Amrian pottery and the beginnings of entirely new shapes and decoration virtually identical to those found at Harappa and Mohen jo daro. Casal notes that even though the layers of Periods IIIA (Mound A) are not stratigraphically linked to those of IIIB (Mound B), but that enough evidence exists to justify the placement of IIIA below IIIB. This information would indicate that the Amrian occupation on Mound B and possibly Mound A was directly related having its origins in Period II (Intermediate). The result is a continuously occupied site showing the rise of the Amrian culture and their cultural development into the Mature Harappan Culture. This development starts with the early pottery found at Amri, its relationship with other sites and the role it played in the Early Harappan period. There is a relationship between the Amri ceramics to other ceramics found at associated sites within the Sindh Kohistan region and surrounding areas.

There does seem to be a relationship between the pottery, known here as 'Early Amri', and other types found in the same level. A close evaluation and examination of these ceramics can hopefully help in dating the Amri ware pottery.

B. Dating Amri Ceramics

Since the Early Harappan Period was first described (Mughal 1970), there has been a tendency to accept the way in which it was defined without question. In general, other available avenues of investigation into the nature and extent of the Early Harappan have been largely ignored. The Early Harappan material as put forth by Mughal (1970) is distributed throughout the Greater Indus Valley. Although an abundance of material was

available to Mughal for study, he appears to have focused on a certain subset of the collections due to the very nature of these materials. Some of the ceramics, particularly those of the Kot Diji type, appear to be amenable for study due to their wide distribution, and relative greater accessibility. Yet it is possible that other ceramic types from sites like Amri could prove to be as important to the full understanding of this time period as this other material even though the site is problematic in terms of its dating. The problems associated with the dating of both Amri and Kot Diji will be discussed in the following section. In addition, the potential importance of Early Amri ceramics as representatives of the earliest Harappan occupation in the region will be explored.

The first step in addressing the problem of dating the Amri ceramics involves an examination of their placement within the site of Amri, as well as their correlation with other, similar, ceramic types. This section focuses specifically on the Early Amri ceramics, or Amri wares that have been recovered from the site of Amri within the levels named Period IA and Period IB. These are the two periods that are relevant to the understanding of the Early Harappan Period.

There have been only two radiocarbon dates recovered from Amri, one from Period IB and the other from Period IC. None have ever been recovered from Period IA. The suggested dates have been calibrated using MSCA. The calibrated date from Period IB (TF-864) is 3660-3365 B.C. (Possehl 1988). The calibrated date from Period IC (TF-863) is 3375-3020 B.C. (Possehl 1988). Shaffer (1992:433) varied a little showing Period IB as dating 3660-3360 B.C. (CRD 1σ B.C.), while Period IC dated to 3395-3160 B.C. (CRD 1 σ B.C.).

Despite these radiocarbon dates, there are still many problems concerning the time frame of the earliest occupation of Amri. It has been shown that the unique Amri pottery is associated with the earliest levels (Flam 1981; Shaffer 1992). Despite this, Mughal (1970) has previously stated that Amri and Kot Diji were contemporaneous, ignoring the earlier occupation at Amri. The problem is that though the two sites were contemporary at one point in time, there was an early period of time of unknown length in which Amri was occupied and Kot Diji was not. No one has investigated when or how long this time might have been.

The earliest radiocarbon date (Possehl 1988; Shaffer 1992) from Kot Diji is (P-196) 3370-2900 B.C. (calibrated) and Period IB of Amri (3660-3365 B.C.) is older than the dated level from Kot Diji. Moreover, as Amri Period IA lies beneath Period IB, it must be earlier than the radiocarbon date, thus earlier than around 3700 B.C. This is much earlier than the earliest radiocarbon date from Kot Diji. However, the calibrated radiocarbon date of 3370-2900 B.C. for Kot Diji comes from Level 14, which is two levels above the earliest layer of occupation at the site (Khan 1965:80). It is unclear whether levels 15 and 16 belong to the same period as level 14. Because these levels are based on stratigraphic layers it is difficult to tell how much time has elapsed between them. Moreover, each of these occupational levels contains unique pottery types while at the same time containing a continuous strain of one design type. For instance, pottery Type IV at Kot Diji is found in Levels 5 through 16. This strange combination of unique motifs and a thread of continuous design types makes it difficult, if not impossible, to ascertain the cultural sequence of the site itself, and its relationship to other sites, such as

Amri.

Despite this problem, it may be possible to argue that the earliest occupations at Kot Diji had to be later in time than those at Amri based on the apparent continuity of one or more pottery types. It can be shown that many of the diagnostic ceramic types from Kot Diji are also present at Amri in Period IB and Period IA. It will also show that those Kot Dijian ceramics found in the early levels at Amri occur throughout the Kot Dijian sequence. Moreover, these Kot Dijian ceramics would have to be younger than "Amri ware". From past and present excavations of Kot Dijian cultural material, it has been suggested that the occupation of Kot Diji can not have occurred before approximately 3300 or 3000 B.C. (Flam 1994, personal communication; Possehl 1992) because of pottery type correlations at other sites such as Ghazi Shah, Rehman Dheri, and Harappa. This data indicates the Kot Dijian material in both morphology and age seem to be closely related to Mature Harappan and perhaps directly evolved into it. This would indicate that the earliest occupation of Kot Diji would have to have been younger than the earliest occupation of Amri that is represented by unique Amri ware.

V. INTERPRETING THE EVIDENCE FROM AMRI

The ceramic and chronological evidence from Amri has never been adequately examined to explain the diversity and complexity of material culture which is seen in the Early Harappan period. Amri has been exhaustively interpreted as being an interesting and integral site because of its findings. Yet even though Amri has been the subject of research, it has been given a relatively small role in the cultural development of the Mature Harappan period (Mughal 1970). Amri's cultural and chronological placement within the Early Harappan has essentially been neglected and needs to be addressed.

In the case of the Amri ceramics, the design motifs and their geographical distributions can help to provide cultural linkages and possible chronological comparisons. The settlements which have recovered Amrian wares can also aid in developing an Amrian settlement system, which can help in establishing Amri's early chronological setting and cultural development.

The Amri ceramics have stylistic distinctions, that separate them from other ceramic material culture dating to the Early Harappan period. These stylistic distinctions should indicate a greater degree of stylistic diversity, thus the analyses of this diversity or stylistic variability may reveal the existence of intra-settlement boundaries (Hedgmon 1992). This can be better applied to the case of the Amri ceramics, where stylistic distinctions occur within a number of settlements and within a bounded geographical area during the Early Harappan period. If this is true, then in the absence of interpretable archaeologically observable stylistic boundaries, stylistic diversity in iteslf can be an

indication of social distinction (Hedgmon 1992). Their are great social implications for ceramics, especially stylistic variability. The social implications of ceramics has been a widely discussed topic essential for understanding the cultural development of social groups and civilizations (Adams 1972; Hole 1977). The distribution and stylistic variation of Amri pottery will be discussed in this section. This information will be used in an application of the concept of horizon styles in order to illustrate how boundaries can become evident.

A. The Amri Evidence and Past Interpretations

Mughal (1970) presented evidence that the early occupations at Amri and Kot Diji constituted an Early Harappan, and not a pre-Harappan period of the Indus Civilization. He stated that the Amri, Kot Diji, and Sothi complexes represented the Early Harappan Period, while the pre-Harappan period was represented by the material culture from KGM I-III, Anjiri I-II, and Rana Ghundai I (Mughal 1970:379). However, as Mughal (1970) pointed out, the Amrian assemblage did not appear to be genetically related to the Mature Harappan, while the Kot Dijian assemblage appeared to be genetically related. This infers that the pre-Harappan is temporally earlier than the Early Harappan period, and therefore Amri cannot be termed as pre-Harappan, nor Early-Harappan.

Mughal's scheme has Amri and Kot Diji as contemporaneous sequences, suggesting, that the sites appear to be chronologically Early Harappan, but only the Kot Dijian assemblage was to be termed Early Harappan (Flam 1981:14). Although the Amrian sequence has been labeled Early Harappan, Amri has an earlier level that has

escaped interpretation (Flam 1981:10; Casal 1964a). Mughal's "pre-Early Harappan" material is totally lacking in Sindh, which might explain a great deal about why Amri's interpretations were not challenged earlier. The earliest Amrian material may provide a new window on the Early Harappan Period from which to see the importance of Amri within early cultural development of the Harappan Civilization.

B. The Amri Chronology and Other Sites[1]

The sequence of occupations at Amri can be better understood through studies of ceramics design motifs or stylistic similarities. Such an examination can aid in the understanding of Amri and its placement within the cultural evolutionary system of the Early Harappan period. Close ceramic ties do exist between the prehistoric sites of Baluchistan, particularly southern Baluchistan, and the Kirthar and Kohistan regions of Sindh during the Early Harappan phase and can be established on the basis of correspondences in artifact assemblages.

The explanations of Amri chronology that will be presented are based solely on the stylistic similarities that exist between the ceramics. There are no conclusive radiocarbon dates that can be used to accurately identify the interpretations presented within this section. However, they do present the very close relationship between the Amri ceramics and the ceramics from other sites in an interesting new light. These insights will hopefully prompt a re-examination of the site of Amri and a redefinition of

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[1] All ceramic numbers for Amri are taken from Casal (1964a).

the Early Harappan.

The site that we must first look to is Kot Diji and its so-called pre-Harappan ceramics. A few types found at Amri are similar to Kot Dijian vessels (Nos. 12-13-139 and for the jar neck with a triangular section only, Nos. 37 and 208 to 210). These ceramic types are spread from Periods I to III (at Amri). The presence at Kot Diji of similar vessels to Amri's No. 229 of Period ID, and No. 274 (decoration) and No. 282 (for the shape only) of Period IIB tells of the interaction between these two sites. Amri ceramics of a later Period may have also been found at Kot Diji in early levels. This would show that the site of Kot Diji has an later occupational date than that of Amri. This fact has never been authenticated, but the shards do exist in the Kot Diji collections (Flam 1994, personal communication).

Amri's relationship with Kot Diji has been overshadowed by the belief that Kot Diji is more related to the Early Harappan (Mughal 1970). As a result, Amri has received little attention and considered less important than Kot Diji. The Amri, Kot Diji, and also Sothi, complexes have received much attention as to their importance to the Early Harappan, but an individual chronology and a reevaluation of their ceramic content has been largely overlooked (Mughal 1970). Moreover, since Mughal's work the chronological placement of Amri within the Early Harappan period has been largely ignored. Mughal's (1970:195) argument that the earliest Kot Dijian material dates between 3500 and 3400 on the basis of Kot Dijian ceramics at Amri Period IA cannot be upheld. This is because no one can precisely date those diagnostic Kot Dijian ceramics found in the early levels at Amri. Also, those Kot Dijian ceramics occur throughout the

occupations at Amri. Further radiocarbon evidence from Early Harappan levels at Harappa and other sites indicate that the Kot Dijian material occurs more likely around 3000 BC (Possehl 1992; Flam 1994, personal communication). This leaves Amri as the earliest cultural occupation. Therefore, the relationship between Amri and Kot Diji must be re-evaluated in light of past misunderstandings of the data in question.

It was stated above that Amri radiocarbon dates (from Period IB: 3660-3365 B.C. calibrated) are earlier than the dates from Kot Diji. The radiocarbon dates from Kot Diji are dated from Level 14 at ca. 3370-2900 B.C. (calibrated). At first glance, it appears that the occupation from Amri is the earliest. One might say that the two other levels from Kot Diji (Levels 15 & 16) are not dated but might be earlier. While this scenario is possible, it is unlikely as the dateable material comes from a level from Kot Diji rather than a Period as in Amri. It is difficult to lump individual stratigraphic layers together into a Period because it is impossible to ascertain how much time has elapsed. At Amri what is being dated are the periods themselves and not the individual layers, making temporal understanding clearer. Therefore, Amri seems to contain the earliest occupational period, represented by Period IA, which is below the radiocarbon dated Period IB. At Kot Diji, only the stratigraphic layer (Layer 14) is being dated, without

Kot Diji Pottery Type	**Amri Occupational Periods**
Diagnostic Type IV	occurs throughout Periods I, II and III
Type V (everted rim)	ID, IIA, IIB
Type XX	ID
Diagnostic KD Type I	IIB

Table 4: Kot Diji Pottery Types and their contemporaneity with Amri periods, after Mughal (1970:160-161).

knowledge of how much time occurs between Layer 14 and 16.

Another problem with the Kot Dijian sequence is in the placement of the diagnostic Kot Dijiian pottery types. Table 4 illustrates the Kot Dijian pottery types and their associated Amrian Periods. Mughal (1970:73) shows the occurrences of Kot Dijian pottery types by levels at Kot Diji, Mound A, Trench B IV/6. The data presented in Table 4 shows that the Kot Dijian pottery type (Type IV) occurs in Amri Periods I, II and III. This Kot Dijian pottery is found in Levels 5 through 14A, and Level 16 at the site of Kot Diji (Mughal 1970). This indicates that the Kot Dijian pottery Type IV does not change through the occupational levels. This statement does not tell us very much, but when taken together with the evidence of Kot Dijian pottery Type I, it becomes more interesting. The Kot Dijian pottery Type I, which occurs in Amri Period IIB, only occurs in Levels 15 and 16 (see Table 5). These two levels are the earliest at Kot Diji, while Amri Period IIB is considered the Intermediate Period between the Early Harappan and Mature Harappan. Therefore, the statement above seems to suggest that the Kot Dijian culture seems to be associated with the Amrians in late Period I, possibly ID, and also with Period II. This conclusion is confirmed through the examination of the table above and the literature, as Casal (1964a:14) also notes this association.

Amri also had closer contacts to Baluchistan, more so than with Kot Diji, "probably for geographical reasons" (Casal 1964a:14). This connection was also noticed by Mughal (1970). The first north Baluchistan connection comes from the concentric rows of radiating crooks painted in violet inside cups of pink paste, coated with a reddish wash (Casal 1964a: Nos. 7-7a and 8). They are typical products of Togau C, thus

establishing Amri IA approximately level with Mundigak II (Mundigak I, 3 having yielded shards of Togau A pottery). The similarity of rimless jars (Casal 1964a: Nos. 53-54) slanting inward in their upper part, with vessels from Kile-Gul Muhammed, takes us once more to levels roughly contemporaneous with Togau C.

The Amri ceramics show some affinities with the painted style of the Kechi Beg in the Quetta Valley (Fairservis 1956: 257, Fig. 50A, Fig. 53). The pottery is polychrome, and consists of geometric designs that can be said to have been influenced by the Amrians. The painting style on the Kechi Beg ware is crude and very primitive looking. This poses interesting questions to the relationship between Amri and Baluchi sites. One can hypothesize as to what the Kechi Beg wares represent, either the earliest form of Amrian ware, or a bad copy by local potters. The site of Kechi Beg is situated among numerous other sites, including Quetta, Damb Sadaat, and Kili Ghul Mohammad, located within the Quetta Valley. These sites were examined by Walter Fairservis (1956) who conducted surface collections and initial excavations. The examination of these sites and their ceramics, specifically those of Kechi Beg, are extremely important in evaluating Amri's significance.

The designs from Kechi Beg and some from Kili Ghul Mohammad and Quetta has striking similarities to those of Amri. The following show those ceramics from Amri and their close affiliation from those and other sites (see Appendix B). Fairservis (1971: 209) also noted the similarities between Early Kulli and the ceramics from the Quetta Valley. Some of the Early Kulli examples (Fairservis 1971: Figure 54, Kulli Nos. 4, 11, and 13) bear striking resemblance to those from Amri (see Appendix B).

POTTERY TYPES	LEVELS 4	4A	5	5A	6	7	8	9	10	11	12	13	14	14A	15	16
I															×	×
II				×						×	×			×		×
III				×		×	×	×	×		×	×		×	×	×
IV			×	×	×	×	×	×	×	×	×	×	×	×		×
V				×	×	×	×	×	×	×	×	×	×	×	×	
VI									×					×		
VII				×		×	×							×		
VIII				×		×	×	×			×		×			
IX					×					×	×					
X	×		×		×		×	×			×					
XI						×	×				×					
XII						×					×					
XIII						×		×		×	×					
XIV				×				×	×							
XV				×	×	×		×	×							
XVI		×					×		×							
XVII						×	×	×								
XVIII						×	×	×								
XIX						×		×								
XX							×									
XXI	×				×											
XXII					×											

Table 5. Chart indicating the occurrence of diagnostic Kot Dijian pottery Types by level (Mughal 1970).

The site of Mundigak in Afghanistan also contributed similar Amrian like geometric designs on pottery from levels of Period III. Mundigak ceramics with very similar chevrons and geometric motifs to that of Amri Period ID (Casal 1964a; Figure 65, Nos. 222 and 220) are found in Period I (Casal 1964a; Figure 50, No 19). Also from Amri Period ID a similar design can be found in Mundigak Period III (Casal 1961; Figure 56, No. 89 and Figure 60, No. 133) and IV (Figure 67, Nos. 198, 198a) and from Quetta (Fairservis 1956; Design #372, page 303; Figure 48, page 254).

A number of sites in Iran have also yielded ceramics affiliations to those of Amri. The first is the site of Bampur, which was excavated by B. De Cardi (1970) in 1966. This site in Persian Baluchistan has yielded a number of ceramic types that are very similar those from the early periods of Amri (see Appendix B). The second site is that of Tepe Yahya in Iran. A number of ceramics of Amri and Nal type have been excavated from this site. This site has yielded valuable information regarding economic exchange patterns between Mesopotamia, Persian Baluchistan, the Indus and the Persian Gulf during the third millennium (Lamberg-Karlovsky 1969, 1970). These ceramics types have very similar shapes and designs to those of Amri.

Similarities also exist between the geometric designs of the Amri ceramics with those found in Iran, specifically those near Susa (Nissan 1988). Unfortunately, there is no concrete link of any motifs of Amri with those from Iran. In particular, the popular animal and plant motifs have never been found in Amri IA or IB. It is only the plum-red color that is used to fill the geometric designs during the early phases that "must have been transmitted through Iran" since its origins have been attributed to Mesopotamia

during the Jemdet-Nasr Period; thus this could be considered as the earliest possible correspondence for the lowest strata at Amri (Casal 1964a). This purple or plum-red color has been found on Amrian ceramics excavated from the site of Ghazi Shah by Louis Flam (1995, personal communication).

Amri IB also has designs of Togau D as well as C (Casal 1969:87; see Appendix B). This motif has been found up to Amri Period IC (No. 187). The end of IB and IC at Amri is thus equivalent of Togau D. Therefore, Amri IC would be roughly contemporaneous with Anjira III, Kile-Gul Mohammed III/IV, and Mundigak III. A few other comparisons between decorative patterns from Amri ID and the upper levels of Mundigak III lead us to the conclusion of an Early Dynastic II similarity. Among them are bichrome designs identical with shards from Anjiri III/IV; series of wares from North-Baluchistan, particularly Kechi-Beg, labeled as "polychrome" are to be linked with the same group. This makes the appearance of Harappan traits in Amri ID of special significance. I would not call this presence an "intrusion" as Casal has done (1964a:15).

C. Amri and New Interpretations

Amri (around Period IA) and its beginnings can speculatively be attributed to the early third millennium on the basis of the above reevaluations. It has been shown that Amri has a blend of local elements, such as that at early Kot Diji, with Baluch adjuncts. These Baluch contacts are constant throughout the Amri sequence. There is evidence that the cultural sequence at Amri continues into the Mature Harappan period without any breaks.

The cultural occupation at Amri, being both complex and of a long duration, has great potential for the understanding of the evolution of this civilization. The Amrian assemblages have a great influence with the other ceramic assemblages at surrounding sites, as well as those in Baluchistan. The distributions of the particular designs attest to the overall cultural distinction of the Amrian settlements.

As for the relationship between the Amrian assemblages and the Mature Harappan much can be said. The Amrian pottery persists uninterrupted through from Period I to Period II. The stratigraphic continuity between Periods IIA and IIB is also confirmed by the ceramics and needs not be questioned. Although some Harappan pottery traits enter during Period IIA and IIB, the Intermediate period, they are not considered Mature Harappan designs. Period IIIA marks the total disappearance of the Amrian pottery and the beginnings of entirely new shapes and decoration virtually identical to those found at Harappa and Mohen jo daro. Casal notes that even though the layers of Periods IIIA (Mound A) are not stratigraphically linked to those of Period IIIB (Mound B), enough evidence exists to justify chronologically the placement of IIIA below IIIB. This information would indicate that the Amrian occupations on Mound B and possibly Mound A were culturally continuous begining in Period II (Intermediate). The result is a continuous occupied site showing the rise of the Amrian culture and their cultural development into the Mature Harappan Culture. This occupation begins with the early Amri wares, and gradually evolving into the Harappan ceramics known from Harappa and Mohen jo Daro. However, the cultural evolution of the Amrian Culture was not originally interpreted in this way.

Majumdar (1934) noticed a clear cut distinction between the Amrian and Harappan occupations in his excavations. Casal (1964a:17-19) had also stated that the Harappan sequence does not derive from the Amrian as represented in the excavations at Amri. Casal noted that the Harappan elements are thus intrusive and not part of the cultural occupation of Amri. "As for the pottery, it marks changes in taste to an extent suggesting the arrival of an alien population" (Casal 1964a:19). This has some interesting potential for future study, in that this pottery might not represent an "alien" culture, but just the peculiarities of potters, their influences and what might have been in fashion at the time.

Casal also stated that the Harappan specimens from Amri ID and IIA could have been trade wares from a distant town. If this were the case, then the beginnings of Mohen jo Daro would be contemporaneous with the animal representations on ceramics, and with other red-filled or striped bodies. This would correspond to the middle phase of the Early Dynastic in Mesopotamia and agrees with the results obtained by studying the apparition of Indus seals on Mesopotamian sites. These interpretations can also be attributed to different potter's styles, especially those who have seen a design at a previous time, and copy it later.

It is still highly speculative to say if the Amri designs were influenced by those from Baluchistan, or visa versa. Amri's relationship to the Mature Harappan has been demonstrated to exist, yet it is still sketchy. However, it does seem that Amri and other sites with Amrian assemblages appear to be contemporaneous and that a large portion of the life span of these sites were given to interaction and exchange, both of ideas and

material objects. An examination of the Amrian ceramics and their settlements in Sindh using the concept of horizon styles will provide a new interpretation of the Early Harappan.

VI. SETTLEMENT SYSTEMS AND THE EARLY HARAPPAN PERIOD

An interesting way to think of Amri is in terms of settlement systems. Past research has shown that Amri is part of larger settlement system operating within this region (Flam 1981). This system is composed of smaller subsystems that enhance the cultural makeup of this region. Therefore, the settlements around the site of Amri are of grave importance to the study of the Amrian settlement system. Settlement systems are the result of factors relating to the exertion of influence by internal and external forces. Settlement patterning is the product of a simple interaction of two variables - environment and technology. By applying the concept of horizon styles to the Amrian pottery as represented by the specific ceramic types and distributions, it is possible to elucidate the nature of settlement systems in this region.

Archaeological approaches to settlement systems emphasize the spatial, temporal, and structural aspects of observed units, which are most often the sites themselves. The study of settlement types and their distribution can help establish the synchronic settlement/cultural system, and lead to the investigation of diachronic settlement patterns and systemic change. One approach to settlement studies is ecological determinism. It involves the interaction of two variables, environment and technology, and the settlement pattern is the result. In the other approach "settlement pattern data are used as a basis for making inferences about the social, political, and religious organization of prehistoric cultures" (Trigger 1968:54). Only the first approach can be applied to the Indus Civilization as it relates to the ecological diversity and distribution of settlements that

existed during the Early Harappan period. Settlement systems can tell us a great deal of information about cultures, including the kind of technology in use, how they adapted to a particular environment, and what kind of material culture they produced. The main value of settlement patterns lies in its ability to reconstruct prehistoric cultures. These settlements patterns will be elucidated through an examination of material culture, namely ceramics, and observation of its distribution over the landscape. Two different models will be used to explain the distribution and variation of the Amrian material culture. The first is a discussion of the concept of area co-tradition. This will be followed by an application of the concept of horizon styles.

The examination of both the Amrian settlement system and ceramic distribution system, along with its prehistoric environment can provide a working model of a kind of "culture area" or "area co-tradition" as presented by Rouse (1955, 1957). Rouse's notion of area co-tradition as it pertains to the Amrian artifact assemblages, needs some clarification. Rouse takes his definition of the concepts of culture area, co-tradition, and area co-tradition from those by Bennett (1948) and Wissler (1922).

If we view the Amri assemblage and its distribution as a phase, a proper definition must be applied to label Amri as a social group. Rouse (1955:713-714) states that "a phase, focus, or culture may be defined as a complex of cultural traits which recurs in a number of sites or site components and which serves to distinguish these sites or components form all others". Those people that live in a number of sites and share traditions (i.e., Amri), or interrelationships of phases, are said to be of the same social group. This is a combination of both culture area and co-tradition.

An area co-tradition consists of a culture area containing only a single co-tradition. It comprises an area delimited temporally as well as geographically, in which the inhabitants share a distinctive series of elements of culture and in which the inhabitants' phases of culture all have a common origin. Rouse stipulates that there should only be single co-tradition in a culture area, implying that there has been no migration or outside influence strong enough to change the pattern of culture. Although on the surface it appears that the Amrian culture does not conform to this caveat, the influence of other cultures within the Amrian settlement system probably existed only for the purpose of possible "outposts" for the exchange of materials to the Kot Dijian system (Flam 1981). Those influences were not strong enough to change the pattern of culture established by the inhabiting Amrian social groups.

The question at this point then becomes, what is the relationship, if any, between the Amri ceramics and their distributions and other Early Harappan wares at associated sites within the region. This problem can be addressed by examining the settlement systems in two distinct areas by applying the notion of horizon styles.

The horizon style concept was first standardized by A. L. Kroeber (1944). The horizon style is an integrative unit concept, as described by Willey and Phillips (1959), which constitutes the most practical means for realizing the cultural-historical integration. The horizon or horizon style "is defined as a primarily spatial continuity represented by cultural traits and assemblages whose nature and mode of occurrence permit the assumption of a broad and rapid spread. The archaeological units linked by a horizon are thus assumed to be *approximately* contemporaneous" (Willey and Phillips 1959:33). This

means that a horizon style occupies very little time, but covers a wide area. Horizon styles can also be both genetic and distributional (see Rouse (1955) for terminology). The concept of horizon styles can be directly applied to the settlement data both from Amri and Cholistan, because of their ceramic designs and wide distribution.

Those settlements containing Amrian wares and those in the Cholistan area are unique for a number of reasons. Amri's distinct ceramics style has placed great importance on the site and its influence throughout Sindh. The Cholistan area has played an integral part in Mughal's Early Harappan period (1974, 1982) due to the unique ceramics in these settlements. On the basis of settlements and ceramic data, the use of the horizon concept will change the way the Amrian and Cholistan sites are viewed within the Early Harappan period. The data will also show that the Amrian sites have a stronger relationship to the "Early Harappan period" than previously thought, and that the relationship between the Amrian assemblages and the Mature Harappan is also much clearer. The data will also show how the Cholistan material, even though providing much needed information, has been misinterpreted.

A. The Amrian Settlement System

The importance of the relationship between the Early Harappan sites and their relative sizes has never been fully appreciated. Recent developments (Flam 1981; Mughal 1972, 1990) have provided opportunities to discuss the settlements and settlement systems of the Early Harappan period. Settlement systems played an important part in the cultural development of the Indus Civilization. Moreover, such

settlement systems seem to have been in operation during the pre-Early and/or pre-Harappan periods (Dales 1973) or the Early Harappan period (Flam 1981). With the development of urbanism a clearly "direct" relationship is visible between the size of the area to be settled and the level of organizational settlement (Nissen 1988). Within the Amri settlement system, sites appear to be much more concentrated. This can be seen in the number and size of the settlements within the Amri settlement system (see Table 6). These sites are grouped in and around natural water sources and have very close ties to the main site of Amri (Figure 8). It was noted that at this early time the site of Amri already appeared well developed (Shaffer 1992). Hence, the "Amrian Culture" seemed to be already involved in a cultural exchange with other known groups and maintained this relationship throughout the Early Harappan Period.

During the Early Harappan period there were numerous settlements scattered over the areas of Sindh Kohistan, the Kirthar Mountains and the Lower Indus Basin (Flam 1981: 138-144). Table 7 shows the total number of the Amrian settlements along with their sizes. The data for Table 7 is taken from several sources, including Flam (1981), Mughal (1970), and Deva and McCown (1949). The Amrian settlement system consisted of the greatest number of sites during the Early Harappan period (see Table 6). These sites are those that have displayed Amrian assemblages during surface or archaeological examination. A histogram (Figure 9) of the mean site sizes displays sites located in Sindh that contain an Amrian cultural sequence, either from surface survey or stratigraphic excavation. Their sizes appear to be somewhat randomly distributed, although there is a tendency towards small site size. This distribution of site sizes will be

REGION	NUMBER OF SITES		
	AMRI	KOT DIJIAN	HARAPPAN
LOWER INDUS BASIN	2	1	20
KIRTHAR MOUNTAINS/PIEDMONT	7	1	8
SIND KOHISTAN	20	2	11

Table 6. Number of Early Harappan sites in specific regions (After Flam 1981:139).

discussed in more detail later. The data used in this analysis are not complete to say the least, as sites containing Amri ceramics are still being found throughout Sindh and the Baluchistan Hills.

It seems that the largest number of settlements of the Amri period are situated in the Sindh Kohistan region. The Amrian settlement system was evidently confined to the mountain-valley and mountain-piedmont physiography of the Kohistan and Kirthar regions (Flam 1981:140). It might also be possible to extend this system into southern Baluchistan, on the basis of stylistic similarities in ceramics mentioned above and elsewhere (Majumdar 1934; Stein 1943). One can imagine the kinds of interaction the Amri culture participated in due to great agricultural lands, and their proximity to numerous water sources. It also shows the insignificance of the Lower Indus Basin to the Amrian assemblage and Amrian chronological phase (Flam 1981:142). The relative lack of Kot Dijian sites in the three areas stresses the argument of an Amri horizon or horizon style, represented by the Amrian chronological phase and assemblages. Those Kot Dijian sites, two in Sindh Kohistan and one in the Kirthar Mountains, represent a linking of those two regions together.

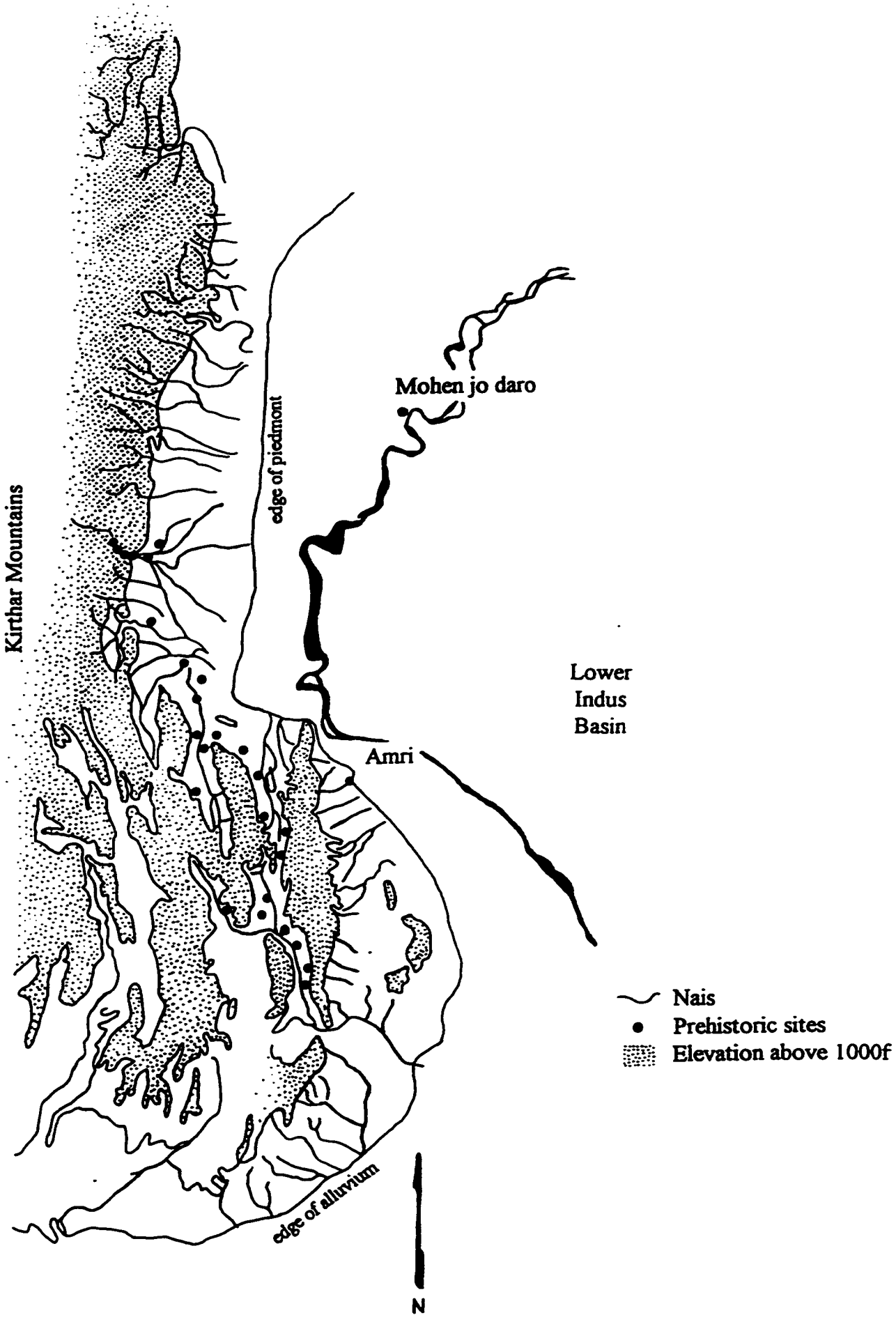


Figure 8. Map of Sites containing Amrian sequence wihtin Sindh.

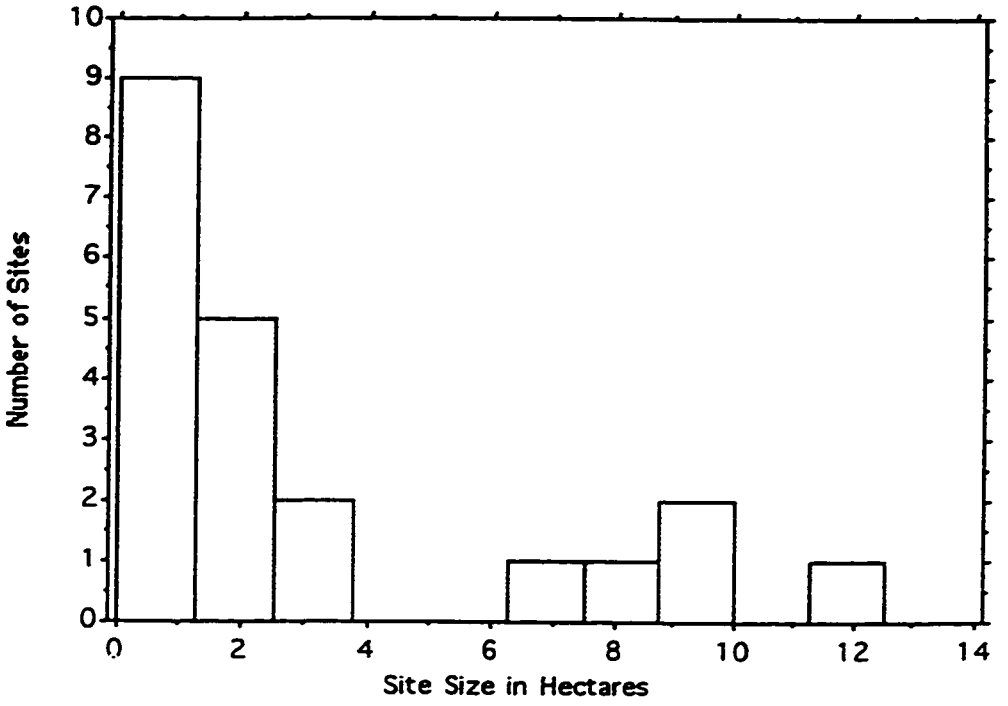


Figure 9. Histogram of Amrian Period Site Sizes.

SITES	Period/Component	Approximate Size in Feet	Square Feet	Square Meters	Hectares
Tharro (Tharri Gujo)	Amrian			115,200	11.5(11.5)
Pandi Wahi	Amrian	450 x 350	157500	14,631.75	3.6
Ghazi Shah	Amrian-Harappan	525 x 450	236250	20,800	2.079(2.1)
Pai-jo-Kotiro	Amrian-Harappan		25		.00023
Rajo Dero	Amrian-Harappan				3.2
Jare-jo-Kalat	Amrian-Harappan		125		.00116
Nazgani-jo Kund	Amrian		50		.00046
Amri	Amrian	1800 x 450	810000	90,000	8.99(9)
Chauro	Amrian	500 x 300	150000		1.39(1.4)
Taung Buthi	Amrian			5000	0.499(0.5)
Bibi Ji Bhit	Amrian			3520	0.352(0.4)
Gorandi (a)	Amrian			5775	0.577(0.6)
Tando Rahim Khan	Amrian			7500	0.749(0.7)
Pokhran	Amrian			8000	0.799(0.8)
Khajur	Amrian			11600	1.159(1.2)
Kai Buthi	Amrian			13175	1.316(1.3)
Chaurlo	Amrian			13,832	1.383(1.4)
Othman Jo Buthi	Amrian			74,420	7.439(7.4)
Bandhni	Amrian			76,860	7.683(7.7)
Damb Buthi	Amrian-Harappan			96,000	9.596(9.6)
Dhal Buthi	Amrian-Harappan			15,200	1.519(1.5)

Table 7. List of sites containing an Amrian sequence and their sizes (After Flam 1981; Fairservis 1971).

There is a direct relationship between the Amri settlements, settlement patterns and ceramic assemblages. They seem to portray the Amri Culture as a village culture. During the Early Harappan period, these "village cultures" existed throughout Baluchistan and Sindh (Fairservis 1971; Piggott 1950; Wheeler 1968). These village

cultures were identified and defined through an examination of stylistic differences on pottery and their distributions. This can be taken one step further. The Amri Culture encompasses numerous settlements that display a certain ceramic style assemblage, and could be "approximately contemporaneous". The Amri Culture also shows signs of being both distributional and genetically linked to the Mature Harappan. Based on all these factors there is sufficient basis to suggest that the Amrian Culture, specifically the Amrian ceramics represent a horizon or horizon style.

Furthermore, the Amrian settlements seem to be located within a specific ecological and geographical zone. The concentration of Amrian settlements within Sindh Kohistan and the Kirthar Mountains/Piedmont also confirms the horizon as an integral unit of investigation over a wide geographical area. Flam also noted that

> the ceramic and settlement data for the Amri phase forms a coherent assemblage which probably indicates a tightly knit cultural population, with regular and reciprocal cultural interactions (1981:181)

This comment supports the idea that the Amri phase was a horizon style.

The Amrian prehistoric settlement system can be viewed as the result of shifting cultural responses to regional ecological factors, both environmental and social (Flam 1981). The primary subsistence system of this settlement system was based on a mixed, strategy of cultivation and pastoralism (Flam 1981). Within the Kirthar and Kohistan regions, the Amrians located their settlements close to perennial springs and took advantage of the cultivable land. The relationship between the highlands of Baluchistan and the lowlands of Sindh Kohistan and the Kirthar Mountains/Piedmont cannot be underestimated due to the nomadic nature of the pastoralist subsistence economy.

Locally derived secondary subsistence materials including stone, clay, wood, chert, river pebbles, semiprecious stones, lapis lazuli (from Afghanistan), steatite (eastern Iran), and copper (Flam 1981:180) were quite important to this system. These materials and their exchange indicates that an Amri exchange system was already in place over varying distances from the middle of the fourth millennium onwards.

The Amri settlement pattern is very dense within its ecological parameters. Flam (1981:149) noted that within Sindh, the cultural distributions to a large extent correspond closely with ecological regions. This along with its close conformity of artifact assemblages and environmental conformity, "permit the definition of a specific ecological community, or ecosystem" (Flam 1981: 145). This inclusion of a horizon style can be taken not as a replacement for community or population, but as a complement to specify and define the boundaries, nature and extent of the Amrian phase.

Flam's (1981) discussion of settlement pattern data for prehistoric Sindh indicated that two ecosystems, one Amrian and one Kot Dijian, were united over great distances into a vast interaction sphere. This information supports notion of Amrian settlement types and their assemblage distribution as being part of a single cultural group operating possibly over a short, contemporaneous period of time (Willey and Phillips 1959:33-34), but also contemporaneous. Applying the horizon style to the Amrian settlement system and other settlement systems, has provided a new avenue to investigate the other less well known areas that encompass the Indus Civilization.

B. The Cholistan Settlement System

One such less known geographic area is the Cholistan desert of former Bahawalpur State in the East Central-Indus Valley (see Figure 10). The archaeological evidence from the Cholistan area provides interesting data on the cultural development of the Indus Civilization, particularly the Early Harappan period. Mughal (1974, 1982, n.d.) has called this period the Hakra Wares Period. It is named this after a number of sites in which Mughal found ceramics. These sites were located along the dry bed of the Hakra River. During Mughal's survey of a 300 mile long, 10-15 mile wide strip, a total of 99 sites were identified as Hakra Ware Period sites.

The Hakra Wares Period is defined and described by Mughal (1982, n.d.) as being a separate cultural period of development, occurring before the Early Harappan period. Mughal (n.d.) dates the Hakra Wares Period to the fourth millennium B.C. (approximately ca. 3500-3100/3000 B.C.). Mughal only conducted a surface survey of these sites. No excavations were carried out at any of these sites.

The Hakra wares are a specific type of ceramic found mostly in the Cholistan area which are very unique in appearance. They are both handmade and wheelmade redwares with a variety of surface treatments. The most typical surface treatment is a second coating of mud mixed with bits of pottery called "mud applique." Also popular are vessels with a series of incised lines on the external surface called Hakra Incised (Mughal 1982:90). A few Hakra wares have recently been excavated from the site of Ghazi Shah (Flam 1995, personal communication). Mughal (1982:90) also cites an example of Hakra wares found at Amri (Casal 1964a: Figure 45, No. 55) but this cannot be confirmed.

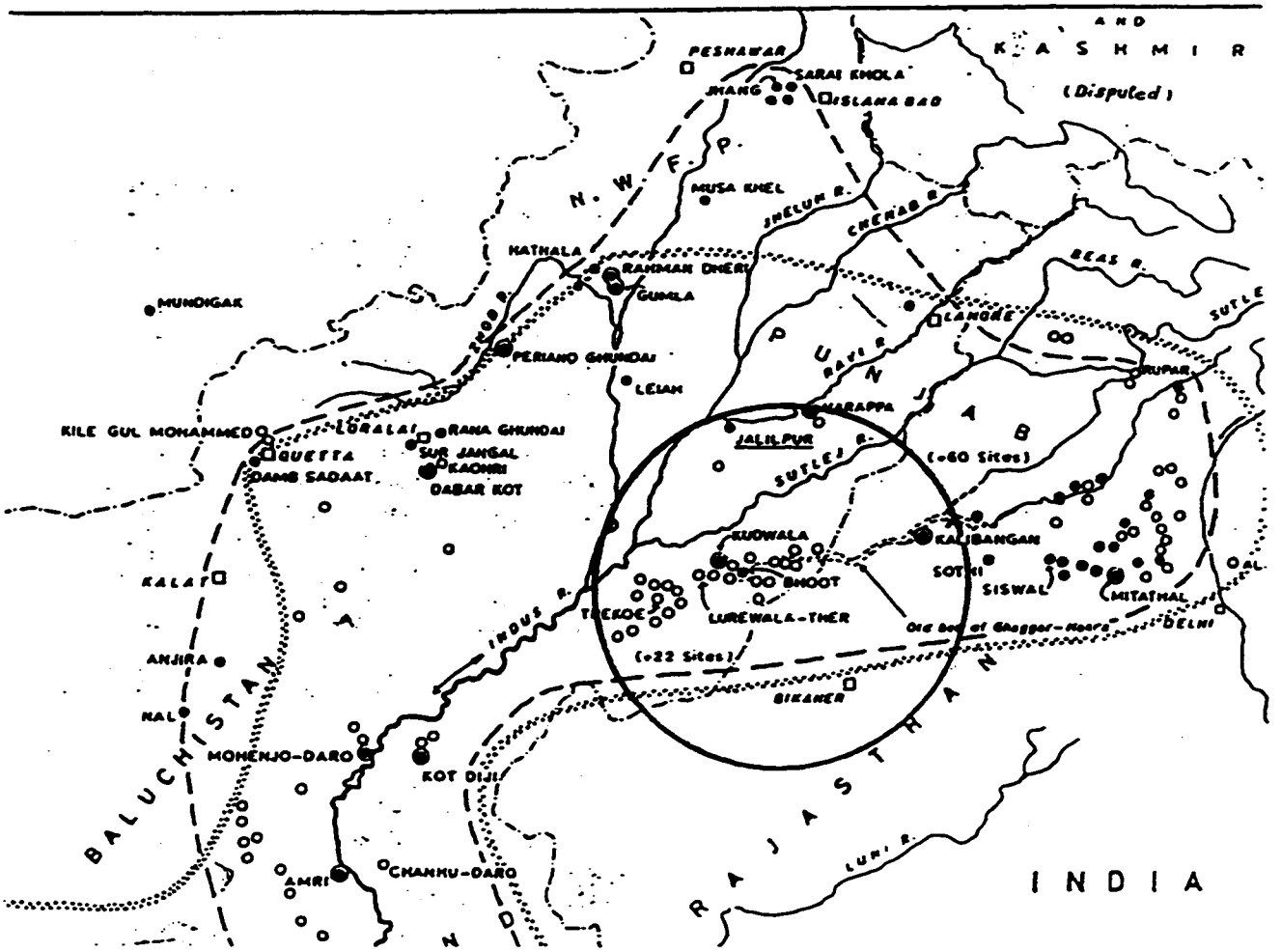


Figure 10. Map showing Cholistan Desert.

The date for the Hakra Wares Period is integral to the understanding of the cultural development of the Indus Civilization. Mughal suggests an early date for the Hakra Wares Period due to the resemblance of the Hakra Mud Applique Ware in vessel form and surface treatment to some of the handmade pottery from the earliest levels at Amri IA. Mughal (1982) indicates that the Hakra Wares Period seems to be culturally connected to the Early Harappan period, in that Hakra ceramics overlap Kot Dijian wares at Jalilpur. He states that there are also two kinds of sites represented in the Cholistan area - camp and settlement sites. They are very important in showing a shift in sociocultural changes from the Hakra Wares Period to the Early Harappan period. During the Hakra Wares Period, only two percent of the sites were multifunctional (combining both residential and industrial). Moreover, during the Early Harappan Period the percentage of multifunctional sites jumped to 35%. According to Mughal (1982), the Hakra Wares Period has yielded a wealth of information concerning the cultural sequence in the central Indus Valley. Its relationship to the Early Harappan can be seen at a number of sites, including Jalilpur and Kot Diji (Mughal 1974, 1982). The identification of over 400 sites in the Cholistan Desert leaves enormous possibilities for future research relating to the chronological and cultural development of the Indus Civilization.

Despite all this information concerning the Hakra Wares Period, if one examines Mughal's data and explanations for this period a number of problems become apparent. First, the date he attributes to the Hakra Wares Period cannot be validated. Since no excavations were carried out at any of these sites, no radiocarbon dates are available. Along this line, Mughal then associates the applique looking handmade ceramics found in

the early levels of Amri (IA) to this period. However, on close examination, this ceramic does not resemble the Amri figure (Casal 1964a: Figure 45, No. 55). Also most of the absolute dates associated with the Hakra Wares are out of the range of Amri's early wares. As a result, it seems premature to state unequivocally that since the Hakra pottery that occurs in the earliest levels at Amri "would certainly date to earlier than 3500 B.C. by radiocarbon" the Hakra Wares Period must also date to 3500-3100/3000 B.C. (Mughal 1982:90; n.d.) It is also worth noting that contrary to Mughal's findings, a number of Hakra Wares have been excavated from sites as far west as the Northwest Frontier Provence and from the site of Ghazi Shah, which produced a radiocarbon date around ca. 3100/3000 B.C.

Secondly, the nature of the settlements of the Hakra Wares Period are sketchy. The sites are numerous, very confined and most all represent a single occupational period. This would indicate that people were moving around a lot and therefore occupied those settlements for short periods of time. A hypothesis as to why this was occurring relates to the nature of the Hakra River. The rivers constant flooding on top of changing courses throughout time, created the necessity of moving settlements across the landscape (Flam 1995, personal communication). And with the total drying up of the Hakra River there would be no reason to settle in the area. Therefore, there are few pottery forms and their surface treatment which can be compared with the succeeding Early Harappan Period (Mughal 1982). Where they do occur those settlements appear to be very permanent. This leaves questions as to why Mughal defines a period earlier than the Early Harappan when the evidence of a cultural relationship between the Hakra Wares

Period and the Early Harappan remains unclear.

The last problem that is associated with the Hakra Wares Period centers on the interpretations and presentation given for the period itself. Mughal had first presented settlement data on the Hakra Wares sites in 1982, but his total survey of the Cholistan Desert has yet to be published (n.d.). Mughal (1990:192, Table 2) had studied the combined settlement patterns of the Sindh and Cholistan areas. He came to the realization that there existed a four tiered hierarchy during the Early Harappan period. This is just not the case. The data from both Sindh and Cholistan must be considered separate due to a number of factors. The first factor is that these areas are ecologically and geographically different, and thus contain different settlements that were specifically adapted for a particular ecological area. Secondly, the evidence portrays the area of Sindh as a distinct integral cultural unit and having a particular horizon style not equal to that of the Cholistan area. Lastly, it seems that Mughal (1990:192-193) by combining the Cholistan and Sindh settlements has wrongfully included the Hakra Period sites into his Early Harappan definition. The combination of the Kot Dijian and Amrian sites is unwarranted and does not contribute to an overall understanding of the complexity of the Early Harappan settlement systems. They should be considered as two separate interaction cultural spheres.

Mughal's presentation of this data shows how his interpretations are somewhat flawed. His table (Mughal 1990:192, Table 2) shows the combined number of sites of the Kot Dijian and Amrian cultural sequence in Sindh, during the Early Harappan. Mughal (1990:193, Table 3) shows the same data for the Cholistan area. As stated above, Mughal

(1990) seems to incorporate the Cholistan and Sindh data, but earlier states that

> the study of hierarchical patterning of Mature Harappan settlement sites, and their comparison with those of the Early Harappan, clearly demonstrates that a four tier hierarchy had already emerged by the beginning of the third millennium B.C. and even before in the Hakra Wares Period in Cholistan (Fig. 6)(p.190)

Mughal (1990:192, Figure 6) shows a histogram of the settlement sizes in Cholistan from data in his Table 3. A problem is observed when comparing the total site numbers for the Hakra Wares Period. Mughal (1982, n.d.) had previously identified 99 Hakra Wares Period sites in Cholistan (see Appendix C). However, he only used a total of 37 sites for his table and nowhere gives an explanation for this reduction. The histogram (Figure 11) below shows the total number of Hakra Wares Period sites (99) according to size which were located in the Cholistan area. One can see that Mughal's data does not correspond to the results presented by Figure 11 (Mughal 1990:191). In addition, if you the sites into two categories, Hakra Camp Sites and Hakra Settlement Sites, one can see a completely different pattern than that represent by Mughal (see Figures 12 and 13).

Mughal (1990:191, Figure 7) illustrates his ideas concerning the hierarchy of the settlements in lower Sindh in a histogram. Mughal has the total number of settlements in lower Sindh representing a three-tiered hierarchy in his figure. He later combines this data from the Amri-Kot Diji sites along with the Cholistan data "which demonstrate that the Early Harappan sites in both areas were in fact differentiated, forming a four-tiered hierarchy" (Mughal 1990:192). In light of this, Mughal (1990:190) concluded this evidence shows that the Early Harappan presented in 1970 was soundly based.

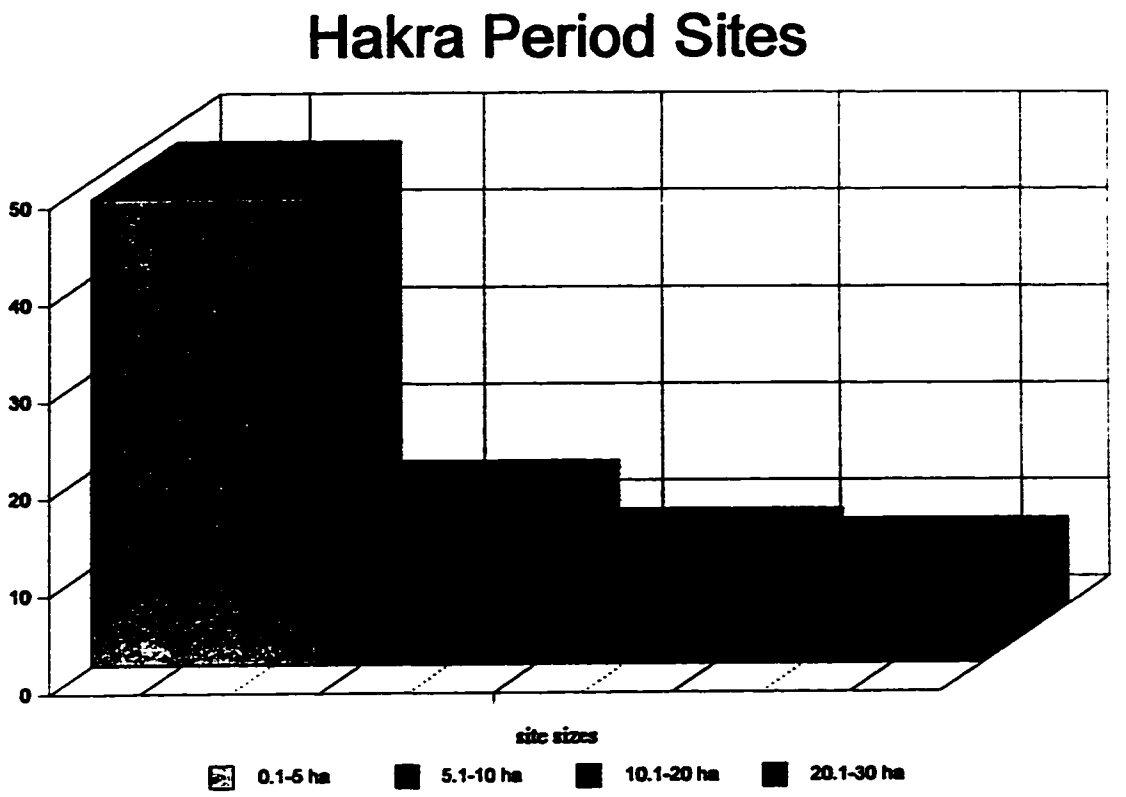


Figure 11: Histogram of total number of Hakra Wares Period sites according to size.

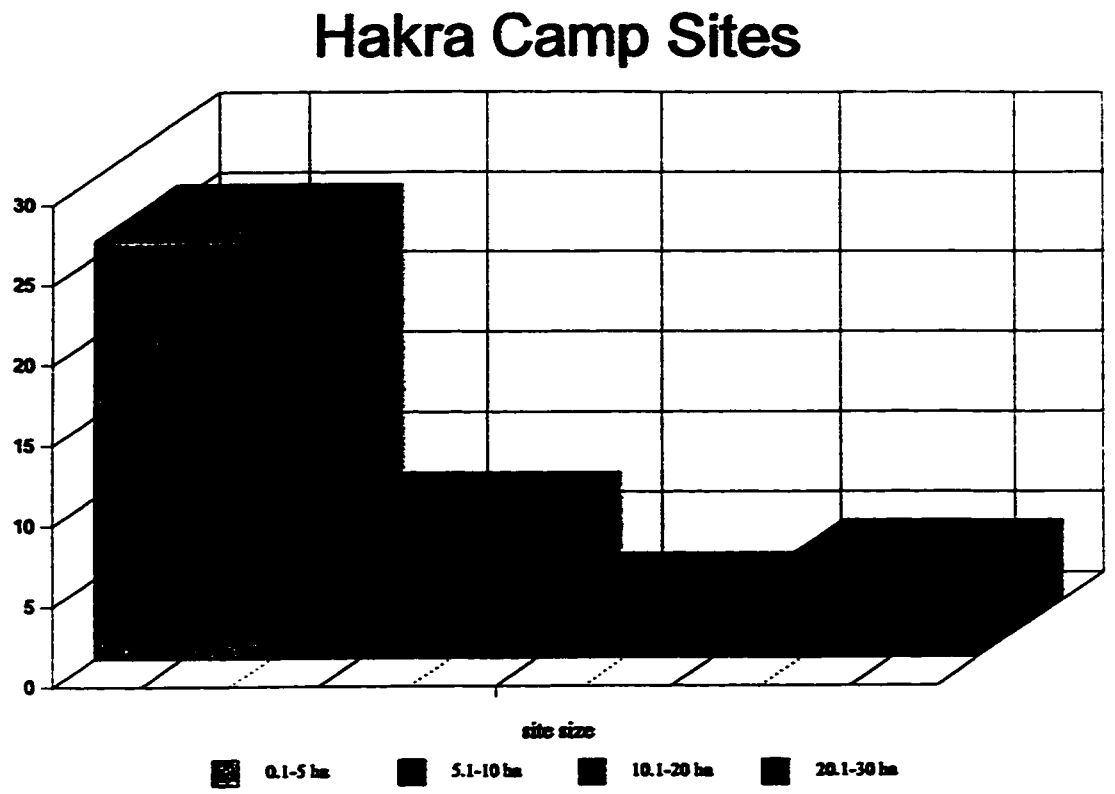


Figure 12: Histogram of total number of Hakra Wares Period camp sites according to size.

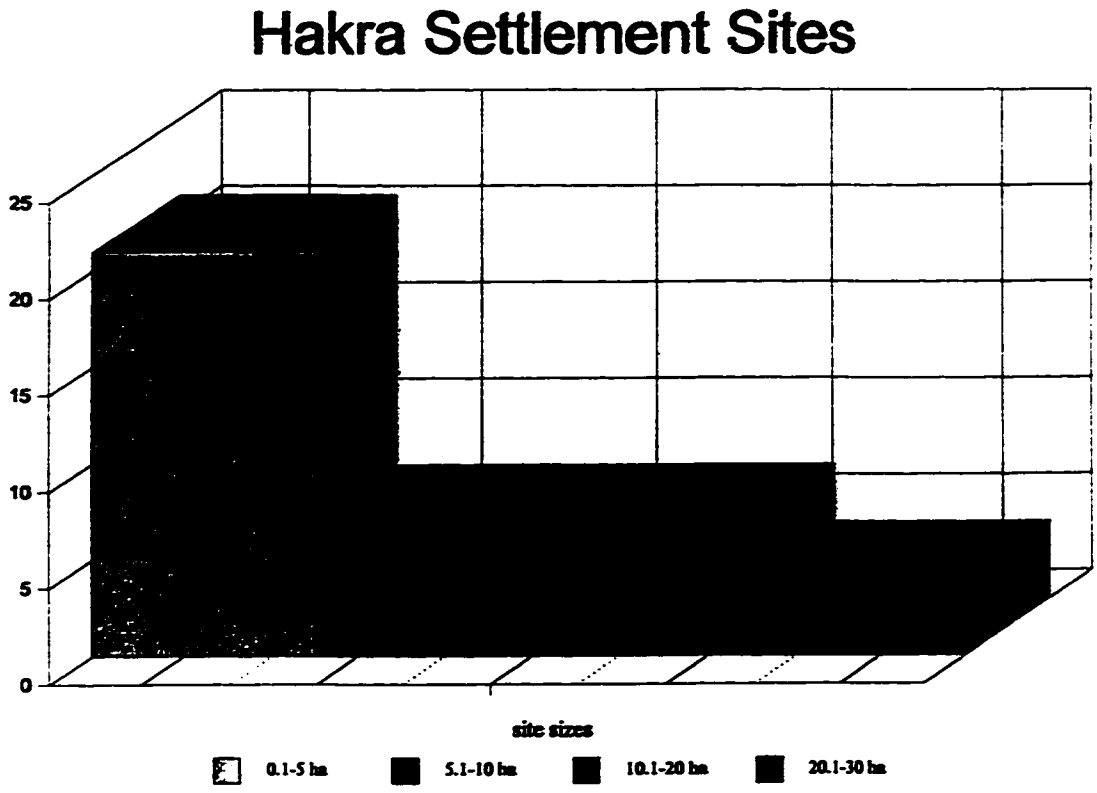


Figure 13: Histogram of total number of Hakra Wares Period settlement sites according to size.

Furthermore, this new evidence helped Mughal to push back the beginning of the Early Harappan period into the second half of the fourth millennium.

However, using data provided in Table 7, a histogram was created using the same intervals as Mughal used in his. The result is a three-tiered hierarchy of the Early Harappan matching that of Mughal (see Figure 15). The problem with this view of the data is that it fails to show the true nature of the sizes of the settlements during this period. Using the exact same data, another histogram was created with a random number of ten intervals and a different picture of the Early Harappan in Sindh emerges (see

Figure 16). This histogram of the data seems to indicate that the range of settlement size appears to show no pattern. While there is a concentration of small sites under 4 hectares, there is little pattern to be seen in the distribution of larger sites. Interestingly there is a gap with no sites within the 4 to 6 hectare size range. It cannot be determined at this time whether this gap is meaningful in any way. Also of interest is that this graph clearly shows that there are just as many sites in the 10 hectare range as in the 4 hectare range. This puts into question Mughal's idea that site number decreased with site size. This analysis illustrates the importance of a close examination of the data. Only in this way can the role of these early settlement systems be understood.

The picture now presented of the Cholistan area is one of a population constantly unsure just when they might have to move out of the rivers path. This group also adapted to very well to their particularly distinct environment. They also had a ceramics assemblage that was quite unique and distributed over a certain geographic area. Based on the evidence it can be suggested that the Cholistan area, with its distinct ceramics assemblage could constitute as a horizon style, but that is all that can be said. Presently, nothing is definitively known of the age this period occupied. It still remains to be answered by the excavation of a number of this Hakra Wares Period sites, particularly one with a series of occupations.

C. The Present State of the Early Harappan Period

There still remain many unanswered questions regarding how the Early Harappan period is to be viewed. The criteria for this period's delineation has never been accepted

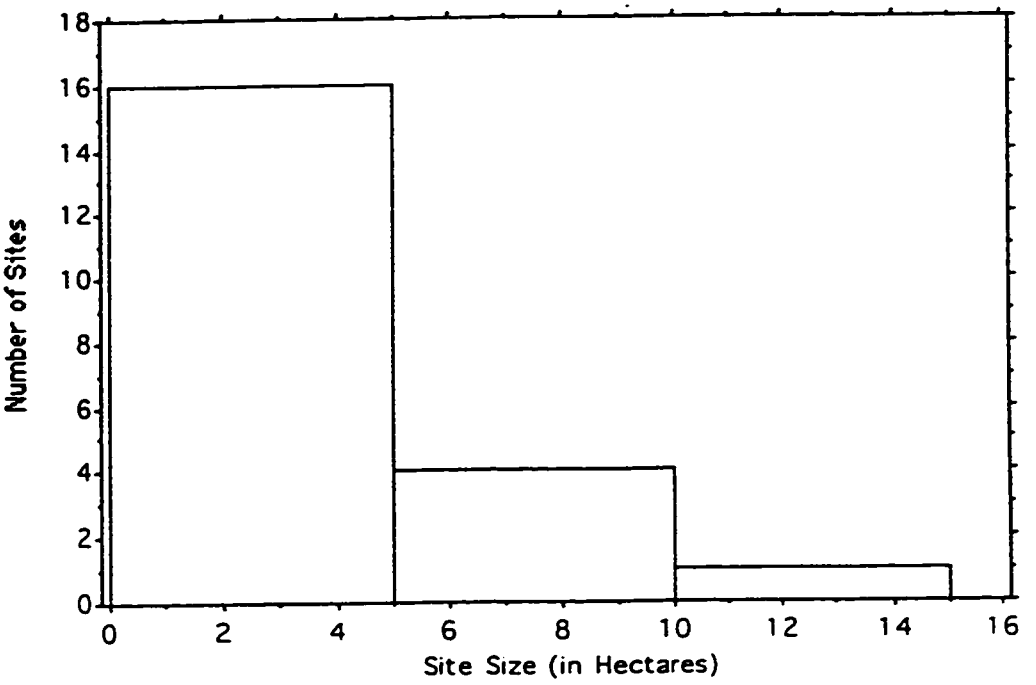


Figure 14. Histogram of Amri Period Site Sizes after Mughal 1990.

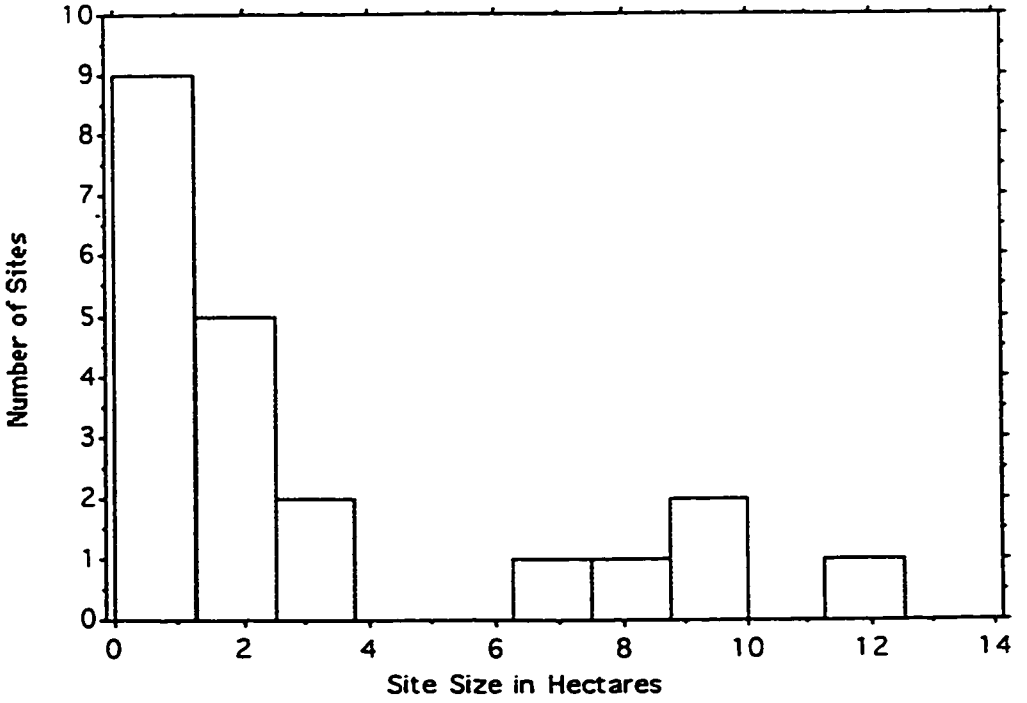


Figure 15. Histogram of Amri Period Site Sizes at random intervals.

by the majority and yet goes unchallenged. It is evident that a grave problem exists in explaining, with the most reliable and correct evidence, the importance that this period holds in the cultural development of the Indus Civilization.

The evidence presented in 1970 by Mughal was an excellent attempt to define and describe the Early Harappan period. His current endeavors (Mughal 1972, 1974, 1982, 1990, n.d.) were to explain the results of recent research in new areas to help further the definition of the Early Harappan. However, the presentation and interpretation of this new data hardly provide an adequate explanation. The results of Mughal's settlement size data do provide a number of things to consider. But his conclusion that the Early Harappan period was a four-tiered hierarchy is clearly misleading. His analysis of the settlement sizes are strategically presented to conform to the definition Mughal originated. It was shown that the site sizes of the Early Harappan period show no real pattern and therefore, cannot be clearly interpreted.

If Mughal has failed to conclusively interpret the data he provides for the Early Harappan period, then what then does that say about the Early Harappan period? The Early Harappan period itself should not be considered meaningless, but rather the way in which its terminology has been abused and become the wastebasket for all material culture to "urban" to be considered pre-Early Harappan, and to early to be Mature Harappan must be reexamined. Mughal has fallen victim to this in trying to justify the hierarchical nature of the Early Harappan. His inclusion of the site size data from both Sindh and Cholistan (Hakra) do not clearly present the complex nature of the different social and environmental restrictions associated with adapting to different geographical

areas. Mughal also fails to include the entirety of his Cholistan data for the Hakra Wares Period sites. Therefore, a picture of his four-tiered hierarchy of Hakra sites is unclear (Mughal 1990:190).

Because of these problems it is suggested that the term Early Harappan period, as defined by Mughal (1970) should be discarded in place of a more encompassing term. This term would take into consideration the variety of both material culture and their respective ecological zones. It would also rely on better comparative data from different areas, as well as depend on the absolute dates recovered from excavated sites. In the end this term would convey the overall cultural distinctness represented by the numerous assemblages and relate this to the broader evolution of the Indus Valley Civilization.

VII. CONCLUSIONS

This paper has focused on problem of defining the very confusing and heterogenous period frequently termed the Early Harappan. This thesis has shown that its history of study has resulted in a stagnant linear terminology. Rather than focusing on the diversity and uniqueness of this early material, authors instead have tried to force a relationship between this material and that of the Mature Harappan. In this paper, the evidence for the early occupation on the site of Amri made us rethink present definitions for the Early Harappan. Furthermore it has been shown that the Amrian pottery it played a significant part in the cultural development of the areas of Sindh and Baluchistan. What has emerged from this study is the reality that the present definitions and interpretations of the Early Harappan cannot adequately explain the overwhelming evidence, both absolute and relative, to the contrary. This has prompted a possible change in the terminology currently being used.

Through this thorough discussion of the Early Harappan period and the specific cultural relationships between Amri and related sites, it becomes possible to better understand the Early Harappan Period. Using the concepts of horizon styles and area co-tradition specific emphasis is placed on the stylistic variety of material culture and its distribution within different ecological zones. Rather than being used as a wastebasket for all material prior to the Mature Harappan, the Early Harappan is viewed as a complex cultural period encompassing a wide variety of regional settlement systems, each somewhat distinct.

Although related to the later Mature Harappan, its complexity makes it an intriguing part of the Harappan sequence that should be given a lot more attention. The excavation of sites that have the possibility of containing a continual cultural sequence from the Early to Mature Harappan must be sought out for future study. At present the Early Harappan period has yet to benefit from proper, well defined, and established criteria. No longer can we rely on examples from the Near East to help in the interpretation of the material from the Harappan Culture.

In addition, the very earliest material from the site of Amri appears to represent an undefined period of cultural development that may not fit within the definition of the Early Harappan. The presence of this distinct cultural occupation also illustrates that the Early Harappan period may encompass more diversity than was once thought. This early occupation at Amri must be examined further to identify its placement within the cultural and chronological sequence of the Indus Civilization.

In light of this, the entire framework of the Early Harappan period of the Indus Civilization must be challenged through further studies of the chronology, variability, and geographic distribution of sites in this period. The time for reevaluating the present explanations and interpretations of the Early Harappan material is at hand. If we can only get passed the notion that what we are dealing with are isolated cultural units operating within a larger interaction sphere, and treat them for what they are, the archaeology of the Indus Civilization would make great headway in explaining and interpreting the archaeological record.

WORKS CITED

Adams, R

1972 Patterns of Urbanization in Early Southern Mesopotamia. In *Man, Settlement, and Urbanism*, edited by P.J. Ucko, R Tringham, and GW Dimbleby, pp. 735-749. Duckworth, London.

Allchin B., and Allchin R.

1982 *The Rise of Civilization in India and Pakistan*. Cambridge University Press, Cambridge.

Bennett, W.C.

1948 The Peruvian Co-Tradition. In *A reappraisal of Peruvian Archaeology*, Memoirs, Society for American Archaeology, 4:1-7.

Brinkman, R. and Rafiq, M

1971 Landforms and soil parent materials in West Pakistan. *Pakistan Soils Bulletin* 2. Lahore: Soil Survey of Pakistan

Casal, J.M.

1961 *Fouiles d'Mundigak. Vols. 2.* Librairie C. Klincksieck, Paris

1964a *Fouilles d'Amri. Vols. 2.* Librairie C. Klincksieck, Paris

1964b Fresh Digging at Amri. *Pakistan Archaeology* 1:57-65.

1968 Amri Excavations. *Pakistan Archaeology*. 5:47-50.

1969 *La civilisation de l'Indus et ses énigmes*. Fayard.

Dales, G.F.

1973 Archaeological and Radiocarbon Chronologies for Protohistoric South Asia. In *South Asian Archaeology*, edited by N Hammond, pp. 157-169. Noyes Press, New Jersey.

1982 Mohenjodaro Miscellany: Some Unpublished, Forgotten, or Misinterpreted Features. In *Harappan Civilization: A Contemporary Perspective*, edited by G.L. Possehl, pp. 97-106. Oxford and IBH Publishing Co., New Delhi.

De Cardi, B.

1970 Excavations at Bampur, A Third Millennium Settlement in Persian Baluchistan, 1966. *Anthropological Papers of the American Museum of Natural History*. 51 (3).

Deva, K., and McCown, D.E.
1949 Further Exploration in Sind:1938. *Ancient India* 5:12-31.

Dyson, RH
1982 Paradigm Changes in the Study of the Indus Civilization. In *Harappan Civilization: A Contemporary Perspective*, edited by G.L. Possehl, pp. 417-428. Oxford and IBH Publishing Co., New Delhi.

Fairservis W.A.
1956 Excavations in the Quetta Valley, West Pakistan. *Anthropological Papers of the American Museum of Natural History* 47 (2).

1967 The Origin, Character, and Decline of an Early Civilization. *American Museum Novitates* 2302. The American Museum of Natural History, New York.

1971 *The Roots of Ancient India: The Archaeology of Early Indian Civilization.* The Macmillan Company, New York.

Flam, L.
1981 The Paleogeography and Prehistoric Settlement Patterns in Sind, Pakistan (C.A. 4000-2000 B.C.) Ph.D. Dissertation, Anthropology Department, University of Pennsylvania.

1986 Recent Explorations in Sind: Paleogeography, Regional Ecology, and Prehistoric Settlement Patterns. In *Studies in the Archaeology of India and Pakistan,* edited by J. Jacobson, pp. 65-89. Oxford & IBH Publishing Co, New Delhi

1994 Personal communication

1995 Personal communication

Hedgmon, M
1992 Archaeological Research on Style. *Ann. Rev. Anthropol.* 21:517-536.

Hole, F
1977 Social Implications of the Prehistoric Ceramics of Xuzestan. Paper Presented at the VIth Annual Symposium on Archaeological Research in Iran, Tehran.

Kenoyer, J.M.
1991 The Indus Valley Tradition of Pakistan and Western India *J. World. Prehist.* 5(4):331-385.

Khan, K.H.
1965 Excavations at Kot Diji. *Pakistan Archaeology* 2:28-47.

Kroeber, A.
1944 Peruvian Archaeology in 1942, *Viking Fund Publications in Anthropology*, 4. New York.

Lamberg-Karlovsky, C.C.
1969 Tepi Yahya. *Iran* 7:184-186.

1970 Excavations at Tepe Yahya (1967-1969. American School of Prehistoric Research, Peabody Museum, Bull. 27, edited by H. Hencken.

Majumdar, N.G.
1934 *Explorations in Sind. Memoirs of the Archaeological Survey of India* 48. Manager of Publications, Delhi.

Marshall, J. Sir
1931 *Mohenjo-daro and the Indus Civilization.* London.

Mughal, M.R.
1970 *The Early Harappan Period in the Greater Indus Valley and Northern Baluchistan (C. 3000-2000 B.C.)*. Ph.D. Dissertation, Anthropology Department, University of Pennsylvania.

1972 The Present State of Research on the Indus Valley Civilization. *Proc. Int. Symposium on Moenjo daro*, pp. 1-28.

1974 New Evidence of the Early Harappan Culture from Jalilpur, Pakistan. *Pakistan Archaeology*, 27(2):106-113.

1982 Recent Archaeological Research in the Cholistan Desert. In *Harappan Civilization: A Contemporary Perspective*, edited by G.L. Possehl, pp.85-95. Oxford and IBH Publishing Co., New Delhi.

1988 Genesis of the Indus Valley Civilization, *Lahore Museum Bulletin* 1:45-54.

1990 Further Evidence of the Early Harappan Culture in the Greater Indus Valley: 1971-1990. *South Asian Studies* 6:175-199.

n.d. Archaeological Surveys in Bahawalpur. *Pakistan Archaeology*.

Nissan, H.
1988 *The Early History of the Ancient Near East (9,000-2,000 B.C.).* University of Chicago Press, Chicago.

Piggott, S.
1950 *Prehistoric India.* Penguin Books, Baltimore.

Possehl, G.L.
1988 Radiocarbon Dates from South Asia. *Man and Environment* 12:169-196.

1992 The Harappan Cultural Mosaic: Ecology Revisited. In *South Asian Archaeology 1989,* edited by C Jarrige, pp. 237-244. Prehistory Press, Wisconsin.

Rafiq, C.M.
1971 Crop ecological zones of the Indus Plains. FAO Soils Survey Project, Pakistan. Soil Resources of West Pakistan and their development possiblities. Rome: United Nations Development Programme. Technical Report 1:60-69.

Rouse, I.
1955 On the Correlation of Phases of Culture. *Am. Anthropologist.* 57:713-722.

1957 Culture Area and Co-Tradition. *Southwestern J. Anthropol.* 13(2):123-133.

Shaffer, J.G.
1992 Indus Valley, Baluchistan, and the Helmand Drainage (Afghanistan). *In Chronologies in Old World Archaeology,* edited by R.W. Ehrich, pp. 425-446. The University of Chicago Press, Chicago.

Stein, S.A.
1943 *An Archaeological Tour along the Ghaggar-Hakra River 1940-42.* Microfilm ADI-4861, Washington. American Documentation Institute, Library of Congress.

Trigger, B.
1968 The Determinants of Settlement Patterns. In *Settlement Archaeology,* edited by K.C. Chang, pp. 53-78. National Press Books, California.

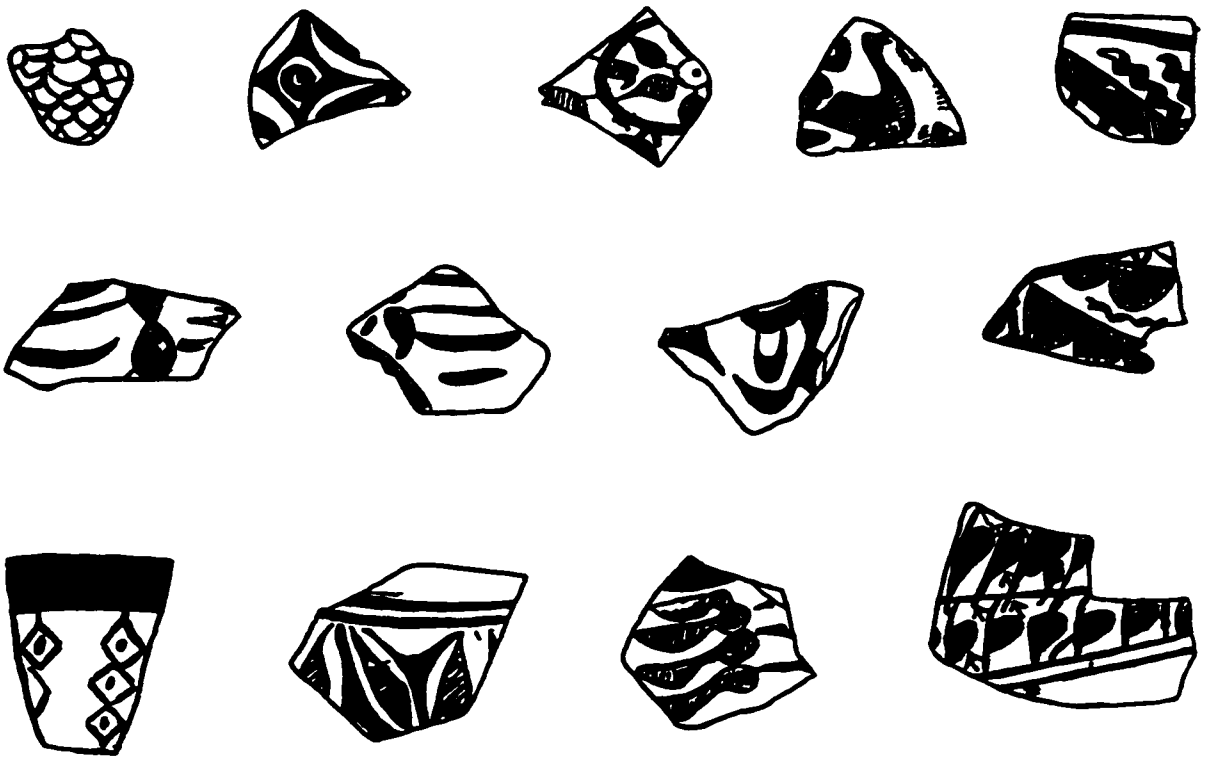
Wheeler, M.
1968 *The Indus Civilization.* Cambridge University Press, Cambridge.

Willey, G.R. and Phillips, P.
1959 *Method and Theory in American Archaeology.* University of Chicago Press, Chicago.

Wissler, C.
1922 *The American Indian: An Introduction to the Anthropology of the New World.* Second Edition, New York.

APPENDIX A:

Drawings of Amri ceramics from Majumdar (1934) excavations.



APPENDIX B:

The following drawings represent a limited examination of the similarities between the designs on Amri cermaics and ceramics from other sites. Underneath the drawing is the name of the site, the time period, the figure number or the design number and the ceramic artifact number.

A number of references were used to compile these comparisons. They are as follows:

Casal, J M

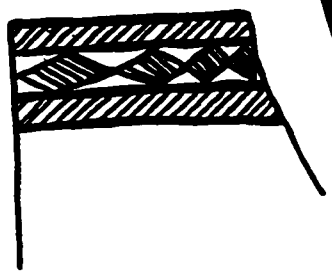
1964 **Fouilles d'Amri.** 2 Vols. Paris.

1961 **Fouilles d'Mundigak.** 2 Vols. Paris.

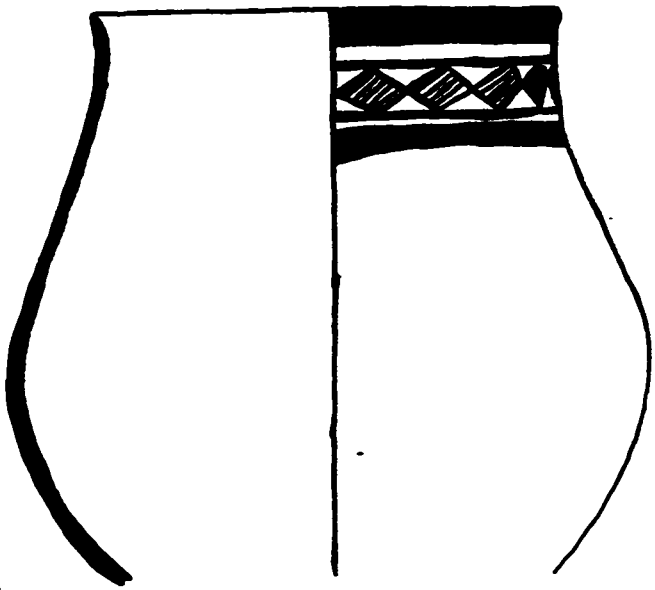
Fairservis, W

1971 **The Roots of Ancient India.** New York, Macmillan.

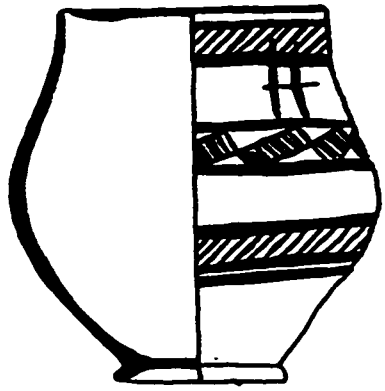
1956 **Excavations in the Quetta Valley, Pakistan.** Anthropological Papers of the American Museum of Natural History, Vol. 45, part 2: New York.



Amri IA: Fig. 30; #30



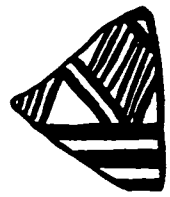
Amri IC: Fig. 56; #152



Amri IB: Fig. 98; #83

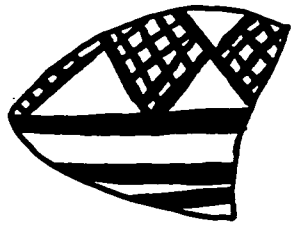
Kechi Beg Design 40

Kechi Beg Design 41

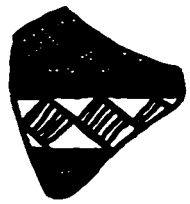


Kechi Beg Design 42

Kechi Beg Design 75

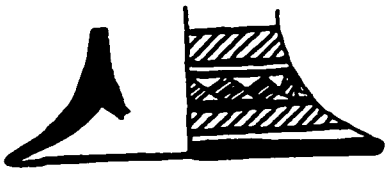


Kechi Beg Design 39



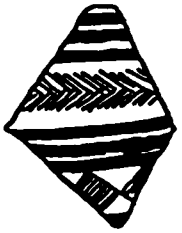
Kechi Beg Design 79

Togau



Amri IIA: Fig. 67; #255

Kechi Beg Design 40

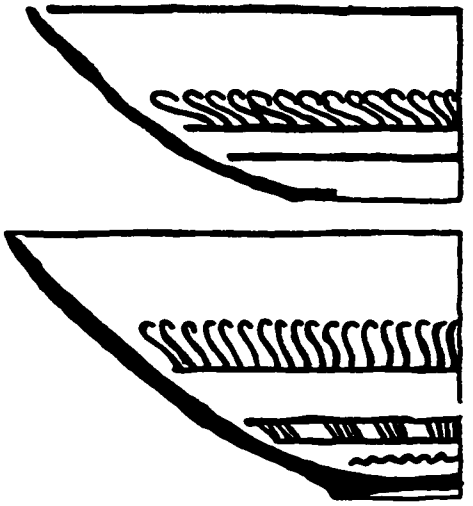


Kechi Beg Design 75

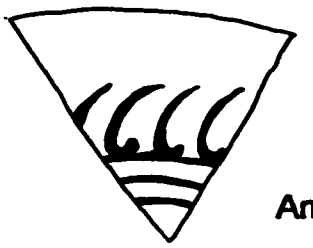
Kechi Beg Design 41

Kechi Beg Design 79

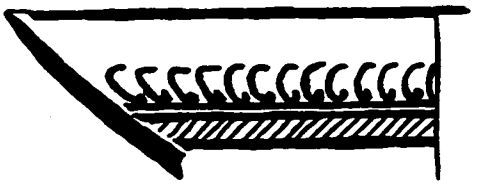
Amri IA: Fig. 39; #7



Amri IA: Fig. 39; #7a



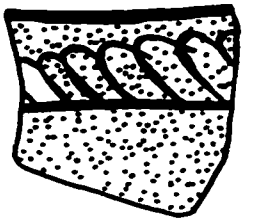
Amri IA: Fig. 39; #8



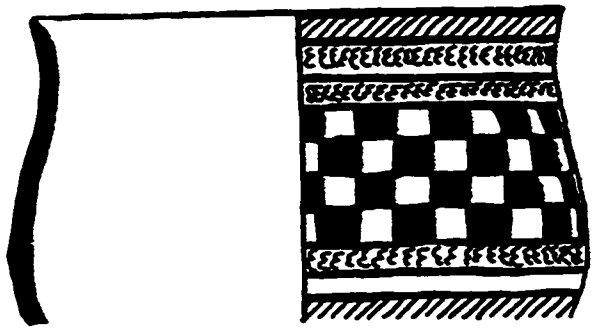
Amri IB: Fig. 47; #71

Kili Ghul Mohammad Design 29

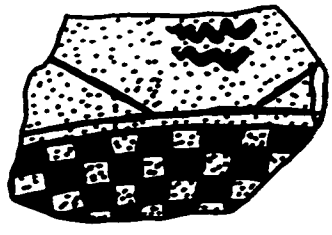
Kili Ghul Mohammad Design 28



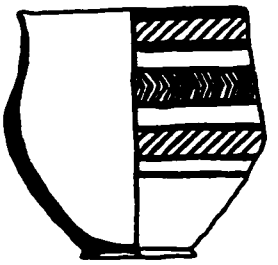
Kili Ghul Mohammad Design 30



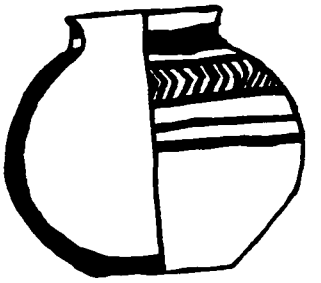
Amri IC, ID: Fig. 56; #159



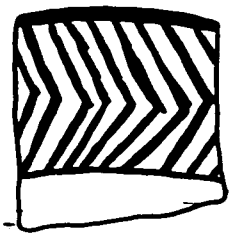
Kili Ghul Mohammad Design 26



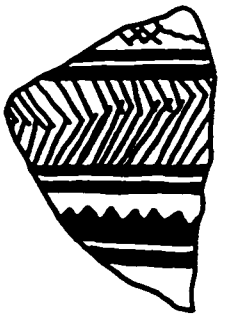
Amri IC:Fig. 57; #164



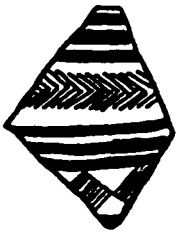
Amri IA: Fig. 42; #36



Quetta Design 155

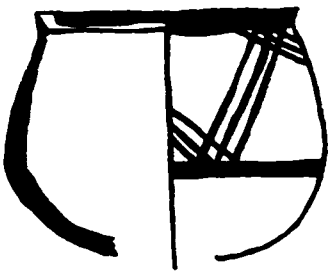


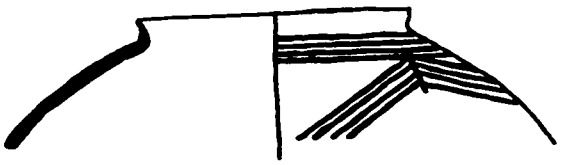
Quetta Design 45



Quetta Design 75

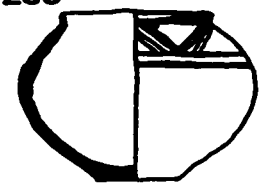
Amri IA: Fig. 42; #37

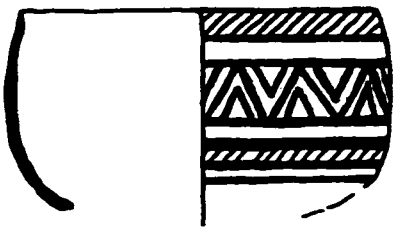




Amri IA, IB: Fig. 42; #35

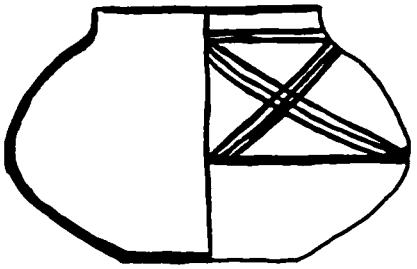
Amri IIA: Fig. 67; #258

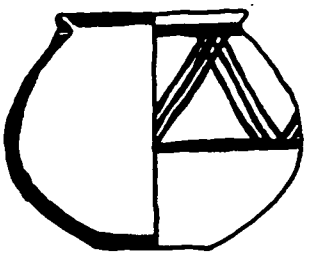




Amri IB: Fig. 70; #283

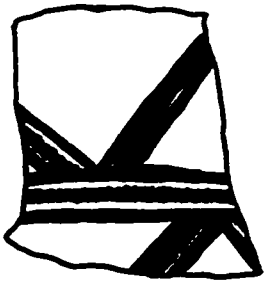
Amri ID: Fig. 65; #226

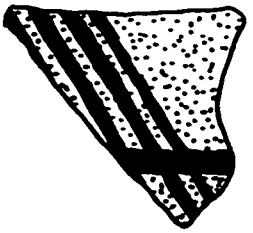


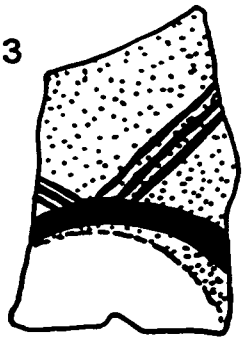


Amri IB: Fig. 70; #284

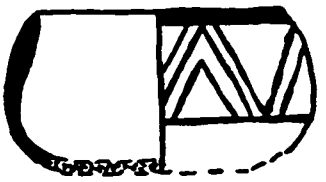
Kili Ghul Mohammad Design 3





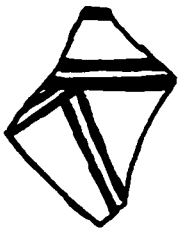


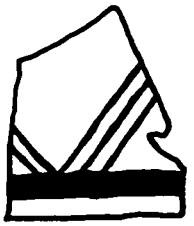
Kechi Beg, Fig. 54; b



Kechi Beg Design 71

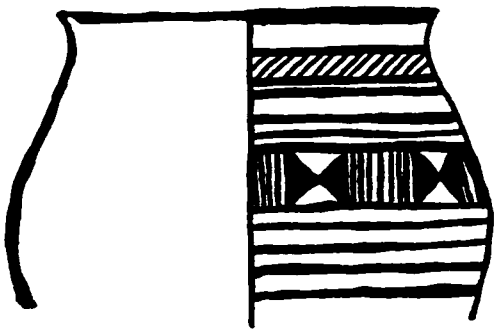
Kili Ghul Mohammad Design 4



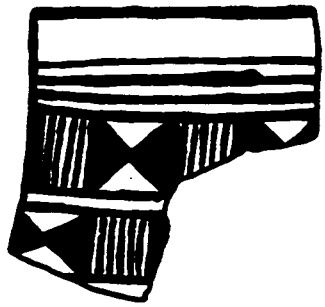


Kili Ghul Mohammad, Fig. 50b

Kechi Beg, Fig. 50; a

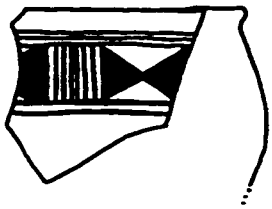


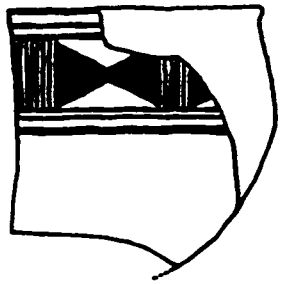
Amri ID: Fig. 62; #206

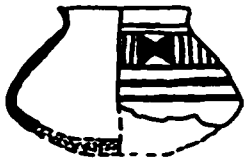


Quetta Design 373

Mundigak IV: Fig. 67; No. 198

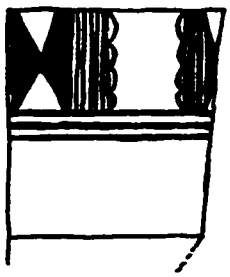




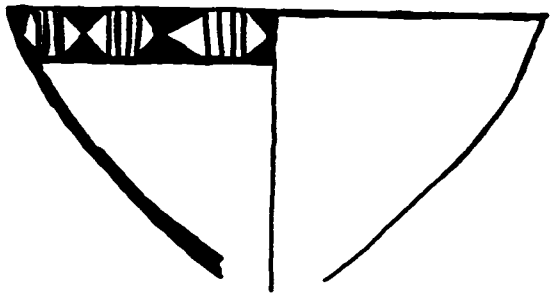


Quetta, Fig. 48

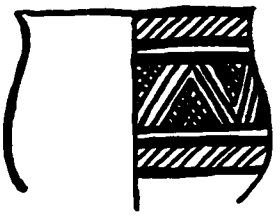
Mundigak IV: Fig. 67; No. 198a



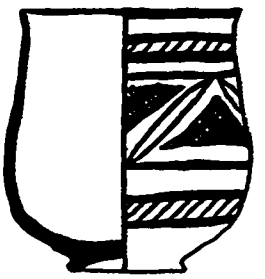
Mundigak III: Fig. 56; No. 89



Mundigak III: Fig. 60; No. 133

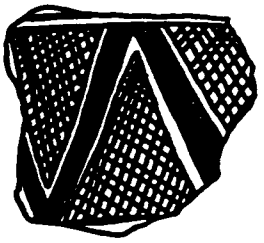


Amri ID: Fig. 65; #222

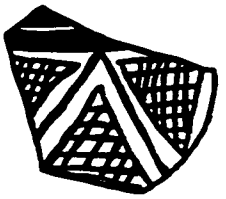


Amri ID: Fig. 65; #220

Mundigak I: Fig. 50; No. 19

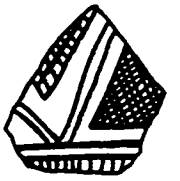


Quetta Design 547



Quetta Design 83

Quetta Design 546



APPENDIX C:

The total number of sites, their types and their sizes in Cholistan identified by Mughal (1982, in press).

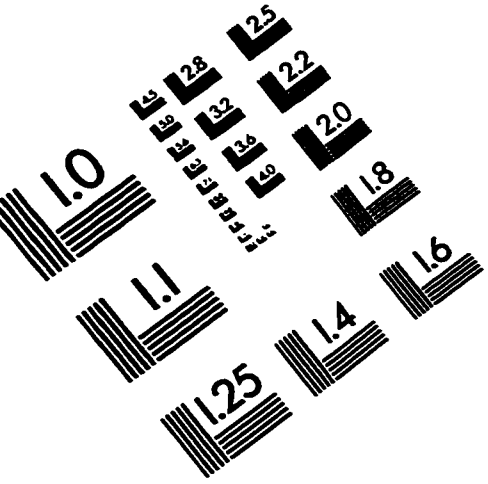
SITE NAME	TYPE OF SITE	SIZE OF SITE (ha.)
1. Abduwali	settlement	7.26
2. Adhi - I	settlement	20.14
3. Akkanwali Theri	settlement	2.96
4. Ambrawali	settlement	20.56
5. Azimwali - II	settlement	4.64
6. Azimwali - C	camp	4.86
7. Badalwala - IV	settlement	1.58
8. Badalwala - V	camp	4.23
9. Baggewali	camp	10.03
10. Bahilawali - C	camp	1.68
11. Bhootanwali - II	settlement	10.74
12. Bhootanwala - C	settlement	20.72
13. Chak 353 (West)	settlement	1.62
14. Chandnewala - II	camp	24.92
15. Changlawala - C	camp	3.40
16. Channanwala Ther	settlement	4.72
17. Chaudhryanwala	settlement	2.25
18. Chikrala	settlement	19.33
19. Chore (Two mounds)	settlement	18.98
20. Dabli (East)	camp	3.62
21. Dabli (West)	camp	4.65
22. Darkhanwala Ther	settlement	8.09
23. Dhoopsari	camp	0.17
24. Dhuni	two settlements	7.23
25. Dhuni (South)	camp	1.2
26. Dinwala	settlement	3.21

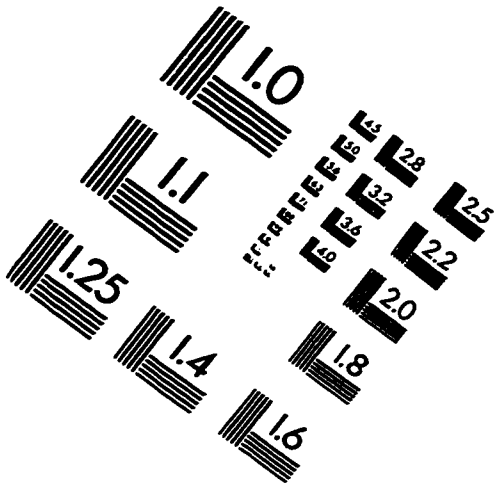
27. Gajjuwala - II	camp	16.71
28. Jafawala - II	camp	7.34
29. Jafawala - III	camp	1.76
30. Jangipar	settlement	4.67
31. Jawaiwali - II	settlement	2.09
32. Jhalar	settlement	16.14
33. Jhandewala - II	camp	1.06
34. Kalhaewala - B	camp	0.99
35. Khiplwali	camp	4.91
36. Khiplewali - II	camp	8.48
37. Kilbaiwala	settlement	2.45
38. Killianwali	camp	0.237
39. Kuchanwala	settlement	0.62
40. Lakhman	settlement	3.20
41. Lathwala - II	settlement	26.3
42. Litanwala	settlement	7.55
43. Lundewali - III	camp	1.44
44. Lundewali - IV	camp	3.29
45. Luppewala	camp	22.65
46. Luppewala - III	camp	6.31
47. Mehwali - II	settlement (A) settlement (B)	1.43 9.22
48. Merechi Kanda	camp	3.58
49. Merechi Kanda	camp	10.63
50. Moniwala	camp	22.88
51. Musafarwali	camp	27.63
52. Naharwali	camp	7.29

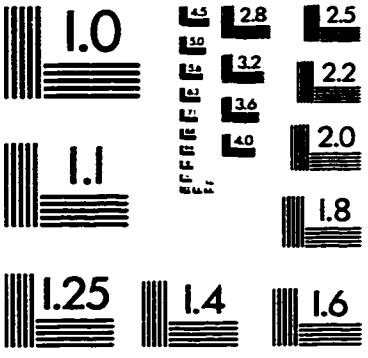
53. Naharwali - B	camp	2.02
54. Naharwala	settlement	6.15
55. Niwaniwala Ther (West)	kilns	2.32
56. Niwaniwali - III	camp	0.278
57. Oinwala Ther	settlement	2.35
58. Parhara	camp	1.53
59. Payunewali Bhit - II	camp	1.25
60. Qadar Bux Theri	camp	0.733
61. Rahmanwali	settlement	0.995
62. Sadwala Kanda	camp	4.457
63. Safuwala Ther	settlement	5.28
64. Safuwala - II	camp	0.326
65. Safuwala - III	settlement	8.086
66. Sanukewala - II	camp	5.37
67. Sheruwala - II	camp	15.11
68. Sheruwala - III	camp	6.03
69. Shidiwala A	settlement	1.76
70. Sohniwali	camp	22.00
71. Sohniwali - II	settlement	4.18
72. Theriwala	settlement	18.87
73. Thoom Thali	settlement	14.10
74. Trillar	settlement	2.88
75. Turawewali Theri	camp	0.976
76. Turawewali - B	camp	3.48
77. Turawewali - C	camp	0.96
78. Valwali	with 2 kilns on SW edge	2.93
79. Valwala - II	settlement	11.18

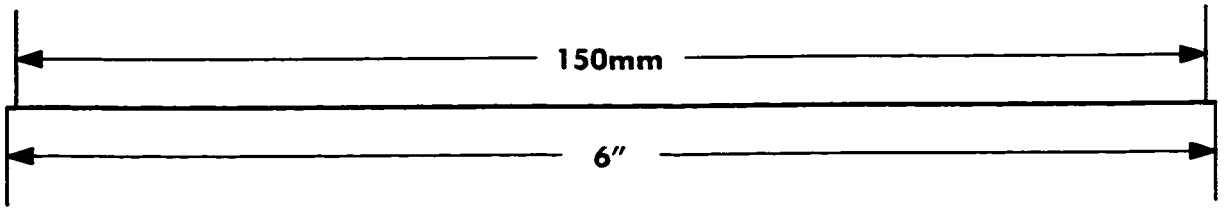
80. Waddanwali	camp	5.74
81. Wariyal - C	settlement	0.4

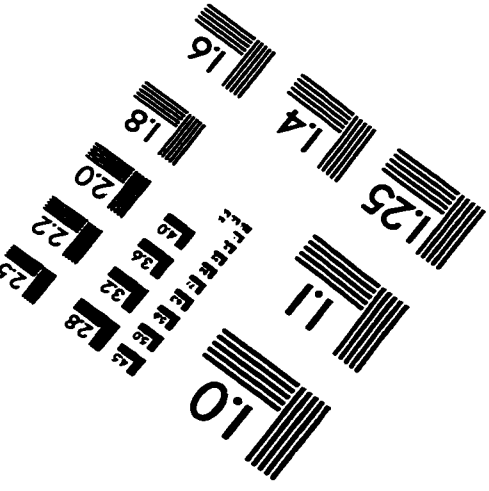
IMAGE EVALUATION
TEST TARGET (QA-3)

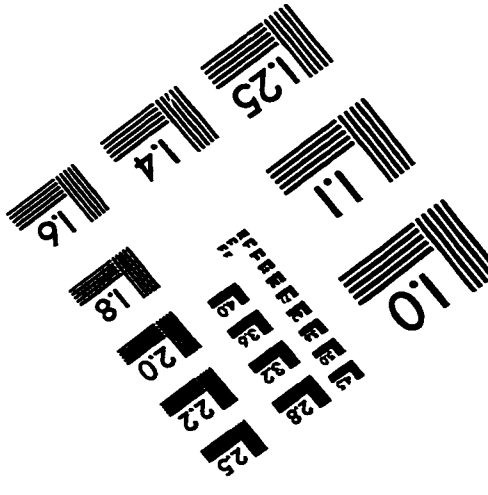












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